JOURNAL OF BUSINESS AND ACCOUNTING

Volume 16, Number 1 ISSN 2153-6252 Fall 2023

IN THIS ISSUE

A REFEREED PUBLICATION OF THE AMERICAN SOCIETY OF BUSINESS AND BEHAVIORAL SCIENCES

JOURNAL OF BUSINESS AND ACCOUNTING
P.O. Box 502147, San Diego, CA 92150-2147: Tel 909-648-2120
Email: mondal@asbbs.org www.asbbs.org
ISSN 2153-6252

The Journal of Business and Accounting is a publication of the American Society of Business and Behavioral Sciences (ASBBS). Papers published in the Journal went through a blind-refereed review process prior to acceptance for publication. The editors wish to thank anonymous referees for their contributions.

The national annual meeting of ASBBS is held in Las Vegas in February/March of each year and the international meeting is held in June/July of each year. Visit www.asbbs.org for information regarding ASBBS.

JOURNAL OF BUSINESS AND ACCOUNTING

ISSN 2153-6252
Volume 16, Number 1 Fall 2023

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Journal of Business and Accounting
Vol. 16, No.1; Fall 2023

AN ANALYSIS OF IMPACT OF A SPECIALIST AND EMPHASIS OF MATTER PARAGRAPHS ON JURORS' ASSESSMENTS OF AUDITOR'S CYBERSECURITY ATTESTATION

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ABSTRACT

CPA firms may need guidance on how jurors would perceive the appropriateness of their provision of cybersecurity attestation services. Would the auditor be expected to disclose areas of potential risk in emphasis of matter paragraphs? Likewise, would the use of a risk specialist enhance the juror's perception of a higher quality of service? We investigate these questions with a hypothetical case describing an auditor providing audit assurance services and cybersecurity attestation services for a client. Results show the use of an independent, external risk specialist and the use of emphasis of matter paragraphs had a significant impact on jurors' perceptions of the appropriateness of the CPA's decision that cybersecurity controls were operating effectively. The use of emphasis of matter paragraphs also had a significant impact in lessening the extent that jurors perceived that the CPA should be responsible for any potential shareholder losses from the cybersecurity controls not being effective.

Keywords: cybersecurity attestation services; independent external risk specialist; emphasis of matter paragraphs; auditor litigation.

INTRODUCTION

Security breaches in businesses and government have become commonplace. A breach may result in loss of billions of dollars in market cap for the company affected, as was the case for Equifax (Reklaitis 2017). Furthermore, auditors who provided cybersecurity attestation services may be in the news if a breach is later discovered (McKenna, 2018). Congress has proposed legislation regarding Cybersecurity Systems and Risk Reporting (H.R.5069, 2016). The Securities and Exchange Commission has released Statements and Guidance on Public Company Cybersecurity Disclosures (SEC 2011, 2018a, 2018b). Public accounting firms have taken notice, and corporate boards may be even more likely than regulators to scrutinize cybersecurity program effectiveness (Deloitte 2018).

The AICPA has responded to the need for cybersecurity attestation services with the development of reporting guidance (AICPA 2017a, 2017b).

Likewise, the AICPA has launched various workshops to provide guidance on cybersecurity risk management reporting (American Accounting Association 2017a, 2017b). Eaton, Grenier, and Layman (2019) have presented a model of effective cybersecurity risk management, including how accountants' core competencies can add significant value.

Currently, auditors are allowed to provide audit assurance services as well as cybersecurity attestation services (AICPA, 2017b). The auditor may express an opinion on the financial statements and also on whether the cybersecurity controls are operating effectively. If there are matters of risk regarding cybersecurity controls that rise to a sufficient level of importance in the auditor's judgement, such that they should be disclosed in addition to the expressed opinion on the cybersecurity controls, then these matters may be disclosed as additional "emphasis of matter" paragraphs (AICPA 2017b). The auditor may also decide to use an independent, external cybersecurity risk specialist in rendering the examination (AICPA 2017b).

CPA firms may need guidance on how jurors would perceive the appropriateness of their provision of cybersecurity services. Specifically, would the auditor be expected to disclose areas of potential risk in emphasis of matter paragraphs? Likewise, would the use of a risk specialist enhance the juror's perception of a higher quality of service? To explore answers to these research questions, we used a hypothetical case describing an auditor that is providing both audit assurance services and cybersecurity attestation services for a client. The case contains descriptive information that provides cues indicating strengths and potential weaknesses in cybersecurity controls. There were three manipulated independent variables: (1) use of an independent, external risk specialist (used vs. not used), (2) use of emphasis of matter paragraphs to describe potential risks (used vs. not used), and (3) outcome of the case (breach vs. no breach). Outcome was manipulated to test for the effects of the use of an external risk specialist and emphasis of matter paragraphs under varied conditions of outcome. Although it is the breach outcome that would most likely be the cause of a lawsuit and subsequent jury trial, it is important to also examine public perception of the appropriateness of the provision of cybersecurity services in conditions in which a breach did not occur, as that is the most common occurring outcome.

After reading the case materials, jurors answered questions regarding (1) the appropriateness of the CPA's decision that the cybersecurity controls were operating effectively, and (2) the extent that the CPA should be responsible for any potential shareholder losses from the cybersecurity controls not being effective. Results show that the use of an independent, external risk specialist and the use of emphasis of matter paragraphs had a significant impact on jurors' perceptions of the appropriateness of the CPA's decision that the cybersecurity controls were operating effectively. The use of emphasis of matter paragraphs also had a significant impact in lessening the extent that jurors perceived that the CPA should be responsible for any potential shareholder losses from the cybersecurity controls not being effective.

We first present a discussion of relevant literature along with the development of the research hypotheses. This is followed by a discussion of the research methodology and analysis of results. Finally, we conclude with a discussion of the implications of the research.

BACKGROUND AND HYPOTHESES

External Specialist

Using a specialist is viewed as an indicator of audit quality in the professional literature (PCAOB 2013; CAQ 2014) and academic literature pertaining to auditing (Kadous 2000, 2001; Reffett et al. 2012; Wright and Wu 2018). In the study by Wright and Wu (2018), in a relatively complex task of asset valuation, jurors' perceptions of the appropriateness of estimation procedures by the auditor were highly correlated with the use of a risk specialist. The provision of cybersecurity risk attestation services is also a relatively complex task, and the AICPA addresses the need and procedures to follow for the use of an external specialist (AICPA 2017b, Section 2.139 and 3.114). Since some CPA's are relatively inexperienced in the area of providing cybersecurity risk attestation services, the public may perceive that CPA's may be in need of an external risk specialist in this area. Thus, the use of a risk specialist may be associated with jurors' perception of the provision of these services as being performed with more due diligence, and thus performed more appropriately. Based on this discussion, we pose this pair of hypotheses:

H1A: Jurors will evaluate the CPA's decision on the effectiveness of the client's cybersecurity controls as being more (less) appropriate if an independent, external specialist is used (not used).

H1B: Jurors will believe that the CPA should be less (more) responsible for any potential shareholder losses from the cybersecurity controls not being effective if an independent, external specialist is used (not used).

Emphasis of Matter Paragraphs

Professional guidance for the provision of cybersecurity risk attestation services provides that when the practitioner believes there are certain matters that are particularly relevant for report users to understand the subject matter or the practitioner's report, the practitioner may include additional paragraphs to *emphasize those matters* in his or her report (AICPA 2017b, Section 4.22). An example is where specific circumstances of the entity's operating environment are, in the practitioner's professional judgment, of such importance that they are necessary for users' understanding of the entity's cybersecurity risk management program and the effectiveness of the controls within that program.

There has been no previous research regarding the effect of the use of these emphasis of matter paragraphs on jurors' assessments of the appropriateness of the provision of cybersecurity risk attestation services. The existing AICPA professional literature does not provide specific guidance on when the observed risk items would rise to the level of importance that would demand the use of emphasis of matter paragraphs in the risk attestation report. However, the Securities and Exchange Commission has stated that companies must provide timely and ongoing information in their periodic reports (including Form 10-K and Form 10-Q) regarding material cybersecurity risks (SEC 2018a, 2018b).

Previous auditing research has shown that disclosing critical auditing matters may provide litigation protection in cases of undetected fraud (Brasel et al. 2016). Reasoning that not using emphasis of matter paragraphs may be perceived by a juror as failure to provide full disclosure by the auditor, we pose our next pair of hypotheses:

H2A: Jurors will evaluate the CPA's decision on the effectiveness of the client's cybersecurity controls as being more (less) appropriate if emphasis of matter paragraphs are used (not used) to disclose specific risks that came to the CPA's attention during the attestation examination.

H2B: Jurors will believe that the CPA should be less (more) responsible for any potential shareholder losses from the cybersecurity controls not being effective if emphasis of matter paragraphs are used (not used) to disclose specific risks that came to the CPA's attention during the attestation examination.

METHODOLOGY

We executed the study with 252 participants from a pool of jurors at a county courthouse, with prior approval by the university's Institutional Review Board for human subjects research. We obtained the cooperation of the court administrator in advance. Jurors were in the pool waiting to be called for a trial. As they were being dismissed from service in the afternoon, they volunteered to participate in the study, completing the questionnaire in a quiet room at the courthouse, and were paid $10 each upon completion.

We developed a hypothetical case of a CPA providing both audit assurance services and cybersecurity risk attestation services. We provided background financial information and described a case where a larger company was considering merging with the client. The president of the client company, Apex Communications, was to receive a significant bonus if the merger was accomplished.

The case contained a description of a report on Apex's cybersecurity risk management program. This case included detailed information on strengths and potential weaknesses in Apex's cybersecurity risk management program which were known to the CPA providing the cybersecurity risk attestation services. The strengths and potential weaknesses in Apex's cybersecurity risk management program were based on typical scenarios described by the AICPA's Attestation Guide (2017b).

The case was designed to manipulate three independent variables: (1) use of an independent, external specialist (used vs. not used), (2) use of emphasis of matter paragraphs to emphasize matters of potential risk (used vs. not used), and (3) outcome of the case (breach vs. no breach). This allowed for a subsequent three-way ANOVA analysis, in order to test the hypotheses previously discussed above, in conditions of varied outcome.

Jurors were instructed to ignore the outcome of the case, similar to the instruction that a judge would give to jurors in an actual case involving litigation.

Jurors then answered a pair of dependent measure questions, used to test each of the four hypotheses discussed above:

1. **Controls_decision:** What is your evaluation of the CPA's decision that the controls in Apex's cybersecurity risk management program were effective?

2. **Responsibility_loss:** To what extent do you believe the CPA should be responsible for any potential shareholder losses from the cybersecurity controls not being effective?

Additionally, for an ancillary analysis, jurors were asked a third dependent measure question to directly assess their evaluation of the CPA's decision to add or not add the separate "emphasis of matter" paragraphs:

3. **Paragraphs_decision:** What is your evaluation of the CPA's decision to add (not add) the separate "emphasis of matter" paragraphs?

Subjects also provided demographic information on age, level of education, and gender (Table 1).

TABLE 1
Demographic Data for Jurors

Attribute	n	Mean	Std Dev
Age (in years)	249	44	14
Years Education	250	16	3
Gender:			
Men	126		
Women	126		
Total	252		

ANALYSIS OF RESULTS

ANOVA analysis of results are presented in Table 2 for the dependent measure **Controls_decision**. Responses were recorded on an 11-point scale, with -5 being "Very Inappropriate" and +5 being "Very Appropriate". Jurors evaluated the CPA's control decision as being significantly less appropriate (p=.01) in the breach treatment (1.00) compared to the no breach treatment (1.91). Consistent with H1A, jurors evaluated the control decision as being significantly more appropriate (p<.001) if an independent, external specialist is used (2.21) compared to not using such a specialist (.71). Consistent with H2A, jurors evaluated the CPA's provision of cybersecurity attestation services as being significantly more appropriate (p=.01) if the CPA used emphasis of matter paragraphs to disclose specific risks (1.87) compared to not using emphasis of matter paragraphs (1.05).

TABLE 2: ANOVA Findings for CONTROLS_DECISION

Panel A: ANOVA Analysis of Results

Source	DF	Sum of Squares	F-Value	p[a]
Specialist	1	142.37	17.32	*<0.001*
Paragraphs	1	46.75	5.69	*0.01*
Outcome	1	53.12	6.46	0.01
Specialist × Paragraphs	1	28.72	3.49	0.06
Specialist × Outcome	1	0.85	0.10	0.75
Paragraphs × Outcome	1	0.08	0.01	0.92
Specialist × Paragraphs × Outcome	1	0.43	0.05	0.82

Variable Definitions:

CONTROLS_ DECISION = Juror's evaluation of the CPA's decision that the controls in the client's cybersecurity risk management program were effective.
SPECIALIST = Independent, external specialist manipulated at two levels: used versus not used.
PARAGRAPHS = Emphasis of matter paragraphs manipulated at two levels: used versus not used.
OUTCOME = Outcome of case manipulated at two levels: breach versus no breach.

We report one-tailed p-values for tests associated with directional hypotheses, these are in italics. For all other tests, we report two-tailed values.

TABLE 2: ANOVA Findings for CONTROLS_DECISION
Panel B: Treatment Means (SD)

Specialist:	**Not Used**	**Used**
	0.71 (2.96) n=126	2.21 (2.88) n=126
Paragraphs:	**Not Used**	**Used**
	1.05 (3.11) n=125	1.87 (2.87) n=127
Outcome:	**Breach**	**No Breach**
	1.00 (3.29) n=124	1.91 (2.65) n=128

Response Scale for **CONTROLS_DECISION:**
11-point scale, with -5 being "Very Inappropriate" and +5 being "Very Appropriate".

ANOVA analysis of results are presented in Table 3 for the dependent measure **Responsibility_loss.** Responses were recorded on an 11-point scale, with -5 being "Not at all Responsible" and +5 being "Totally (fully) Responsible". There was no significant difference (p=.21) in the belief of jurors that the CPA should be responsible for any potential shareholder losses from the cybersecurity controls not being effective in the breach treatment (.60) vs. the no breach treatment (.29). Results did not support H1B, as there was no significant difference (p=.17) in jurors' belief that the CPA should be responsible for any potential shareholder losses if an independent external specialist was used (.25) vs. not used (.63). The only significant finding for the dependent measure Responsibility_loss was for H2B. Consistent with H2B, jurors believed that the CPA should be less responsible for shareholder losses (p=.02) where the CPA used emphasis of matter paragraphs to disclose specific risks (.06) vs. where the CPA did not use emphasis of matter paragraphs to disclose specific risks (.83).

TABLE 3: ANOVA Findings for RESPONSIBILITY_LOSS

Panel A: ANOVA Analysis of Results

Source	DF	Sum of Squares	F-Value	p[a]
Specialist	1	9.21	0.93	*0.17*
Paragraphs	1	39.55	4.01	*0.02*
Outcome	1	6.27	0.64	0.21
Specialist × Paragraphs	1	21.02	2.13	0.15
Specialist × Outcome	1	0.01	0.00	0.98
Paragraphs × Outcome	1	7.93	0.80	0.37
Specialist × Paragraphs × Outcome	1	0.02	0.00	0.97

Variable Definitions:

RESPONSIBILITY_LOSS = Juror's belief that the CPA should be responsible for any potential shareholder losses from the cybersecurity controls not being effective.
SPECIALIST = Independent, external specialist manipulated at two levels: used versus not used.
PARAGRAPHS = Emphasis of matter paragraphs at two levels: used versus not used.
OUTCOME = Outcome of case manipulated at two levels: breach versus no breach.

[a] We report one-failed p-values for tests associated with directional hypotheses, there are in italics. For all other tests, we report two-tailed values.

TABLE 3: ANOVA Findings for RESPONSIBILITY_LOSS
Panel B: Treatment Means (SD)

Specialist:	**Not Used**	**Used**
	0.63 (3.05) n=126	0.25 (3.25) n=126
Paragraphs:	**Not Used**	**Used**
	0.83 (2.99) n=125	0.06 (3.26) n=127
Outcome:	**Breach**	**No Breach**
	0.60 (3.09) n=124	0.29 (3.21) n=128

Response Scale for **RESPONSIBILITY_LOSS:** 11-point scale, with -5 being "Not at all Responsible" and +5 being "Totally (fully) Responsible".

ANCILLARY ANALYSIS

The experimental results reported above supported H2A and H2B. Ancillary analysis was conducted to directly examine jurors' evaluation of the CPA's decision regarding the use of emphasis of matter paragraphs, by analyzing jurors' responses to the following question:

Paragraphs_decision: What is your evaluation of the CPA's decision to add (not add) the separate "emphasis of matter" paragraphs?

ANOVA analysis of results are presented in Table 4 for the dependent measure **Paragraphs_decisison**. Responses were recorded on an 11-point scale, with -5 being "Very Inappropriate" and +5 being "Very Appropriate". Panel A shows the main effect, where the paragraphs treatment was significant at p<.001, with a significant interaction (p=.04) of the paragraphs treatment with the outcome treatment. Illustrating the main effect of the paragraphs treatment, Panel B shows jurors' mean evaluation of the appropriateness of the CPA's decision to use vs. not use emphasis of matter paragraphs as being 2.52 vs. -.95. Simple effects tests for the paragraphs x outcome interaction show that jurors view the CPA's decision to not use explanatory paragraphs as being significantly less appropriate (p=.02) if there is a breach (-1.51) compared to no breach (-.45).

This ancillary analysis provides further support of H2A and H2B, in that it shows jurors view the disclosure of emphasis of matter paragraphs as being particularly important where a breach has occurred. On average, jurors viewed the failure to disclose specific risks with emphasis of matter paragraphs as being less appropriate overall, and this was particularly important if a breach had in fact occurred.

TABLE 4: ANOVA Findings for PARAGRAPHS_DECISION
Panel A: ANOVA Analysis of Results

Source	DF	Sum of Squares	F-Value	p
Specialist	1	9.23	1.36	0.25
Paragraphs	1	772.28	113.86	<0.001
Outcome	1	9.61	1.42	0.24
Specialist × Paragraphs	1	0.33	1.05	0.83
Specialist × Outcome	1	8.79	1.30	0.26
Paragraphs × Outcome	1	28.84	4.25	0.04
Specialist × Paragraphs × Outcome	1	7.73	1.14	0.29

Variable Definitions:

PARAGRAPHS_DECISION = Juror's evaluation of the CPA's decision to add (not add) the separate "emphasis of matter" paragraphs.
SPECIALIST = Independent, external specialist manipulated at two levels: used versus not used.
PARAGRAPHS = Emphasis of matter paragraphs manipulated at two levels: used versus not used.
OUTCOME = Outcome of case manipulated at two levels: breach versus no breach.

TABLE 4: ANOVA Findings for PARAGRAPHS_DECISION
Panel B: Simple Effects Tests for
PARAGRAPHS × OUTCOME INTERACTION

Cell Means:

	Breach	No Breach	Row Means (SD)
Paragraphs Not Used	**Cell 1**	**Cell 2**	
Mean	-1.51	-0.45	-0.95
(SD)	(3.17)	(2.77)	(3.00)
	n=60	n=65	n=125
Paragraphs Used	**Cell 3**	**Cell 4**	
Mean	2.66	2.38	2.52
(SD)	(2.03)	(2.32)	(2.18)
	n=64	n=63	n=127

Simple Effects Test:

	Mean Differences	F-stat	p
[Cell 1] No Paragraphs & Breach − [Cell 2] No Paragraphs & No Breach	-1.06	5.242	0.02
[Cell 3] Paragraphs Used & Breach – [Cell 4] Paragraphs Used & No Breach	0.28	0.383	0.54

Response Scale for **PARAGRAPHS_DECISON**:

11-point scale, with -5 being "Very Inappropriate" and +5 being "Very Appropriate".

CONCLUSION

The findings of this study have implications for the practice of cybersecurity attestation services. Two procedures that are specified by the AICPA guidelines (2017b), the use of a risk specialist and the use of emphasis of matter paragraphs, may result in the CPA's decision on the effectiveness of the controls being viewed as more appropriate, regardless of the outcome.

Regarding the question of the extent to which jurors would hold the CPA responsible for any potential losses resulting from a breach, the use of a specialist had no effect. However, using emphasis of matter paragraphs had the effect of significantly lessening the extent that jurors perceive the CPA should be responsible for any potential losses from a breach.

Regarding information items indicating potential weaknesses in cybersecurity control, jurors may perceive these items as sufficiently important such that they should have been disclosed by the CPA in emphasis of matter paragraphs. Judgment is required by the CPA to determine if the potential weaknesses rise to the level of importance to require emphasis of matter paragraphs. The results of this study suggest that CPA's may need to exercise particular care regarding the application of this judgment, with appropriate documentation of the resulting decision. Also, more precise guidance from the AICPA may be needed for CPA's seeking to determine what level of importance would require emphasis of matter paragraphs. Building on Kaduous (2012, 2016), future research could examine whether more precise guidelines for the use of emphasis of matter paragraphs in cybersecurity risk attestation engagements could result in a safe harbor for auditors when faced with a jury verdict.

Brasel et. al (2016) found that the disclosure of a critical audit matter that was less foreseeable (overstatement of client's inventory) had the effect of reducing auditor liability judgment, whereas an outcome that was more foreseeable (understatement of client's environmental restoration liability) did not have the effect of reducing auditor liability judgment. Our results showed that using emphasis of matter paragraphs had the effect of lessening the extent that jurors perceived the CPA should be responsible for any potential losses from the cybersecurity controls not being effective. Cybersecurity breaches may vary by their foreseeability. Future research could examine whether use of emphasis of matter paragraphs becomes increasingly important (for reducing potential liability) as some types of breaches become less foreseeable.

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Journal of Business and Accounting
Vol. 16, No.1; Fall 2023

REVIEW OF U.S. COUNTY GOVERNMENT INTERNAL CONTROL WEAKNENSSES AND RESULTING MISAPPROPRIATIONS: 2017-2022

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ABSTRACT

In a time where financial fraud is rapidly increasing and technological advances open the backdoor and even the front door for more occurrences, advanced internal control mechanisms need to be implemented and monitored. Local governments attempt to reduce fraud risk by performing annual risk assessments, reviews, and audits. These evaluations and protocols help determine the likelihood of a loss occurring. Studies have determined that local governments often have one of the following four risk assessment violations: absence of risk analysis, non-effective risk analysis, risk management that is not linked to the risks, and failure to record asset obligations in the bylaws. Research has not been able to conclude which activities specifically link to each of these violations directly, but it has been determined that when risk assessments are not effectively employed and evaluated, significant deficiencies in the control environment of the workplace exist. The Association of Certified Fraud Examiners suggested that governmental agencies have the highest median loss as a result of fraud in the United States. This narrative literature review examines the research surrounding local government internal control weaknesses that derive from mismanagement, lack of oversight, and unethical behaviors.

Key Words: Local government, internal controls, fraud, accounting, misappropriations

INTRODUCTION

The establishment and effectiveness of internal control mechanisms are crucial to many organizations, including local governments. Studies have shown that the attitudes of leaders affect the overall workplace performance of the organization. Leaders such as administrators and commissioners of local government set the tone for the rest of the establishment (Chan et al., 2020). Studies have determined that conservative and analytical individuals are the strongest and most respected leaders (How Personality Affects, 2021).

Cressey (1953) developed the idea of a "fraud triangle" which contains the following three components: rationalization, opportunity, and pressure. Opportunity is an area that becomes rather difficult to eliminate, but through the use of internal controls all of these components can be reduced to a respectable level. Local government fraud is often a rationalized opportunity that individuals make in hope that the public will not understand what is happening. Citizens have a right to know how their taxpayer money is being allocated within their local government; with the help of proper training methods and increased internal controls, possible taxpayer dollars will not risk asset misappropriation (Kniepmann, 2022).

Fraud discovered within local units of government is an area that needs enhanced research because the calculated losses are significantly higher than the losses within other organizations. Local governments should theoretically act with the highest code of ethics; however, the lack of internal controls creates room for financial fraud to occur. By evaluating the existing internal control mechanisms within local municipalities, unjust acts of financial crime can be reduced. While improvements to internal controls cannot guarantee fraud to never occur, it will help mitigate risks and bring relief to taxpayers.

LITERATURE REVIEW

A Brief Analysis of Fraud

According to the Association of Fraud Examiners, fraud within local units of government exists to please employees in two main ways. Those two ways are to please the public and to please oneself (ACFE Report to the Nations, 2022). Government workers often feel the need to present financial data to the public in a way that makes everyone happy. An example of this would be when a government employee intentionally fails to document and record transactions that have a high dollar value.

Studies have shown that fraud is more likely to occur in a form of government than within a publicly traded company. The main reasoning behind this is that fraud ruins reputations, but local governments generally do not need to hold a reputation, or at least hold a reputation in a way similar to publicly traded organizations. Investors of publicly traded companies have free range to invest in a different company when reputations or connections are severed. Citizens do not have as much free range to choose a new local government to be a part of when reputations are ruined (Adamek, 2018).

Local Government

Local governments across the United States may vary in terms of set up, however all local governments have similar functions and follow the U.S. Constitution (Dennis, 2018). The Census Bureau reported over 90,000 local governments in the United States operate currently including those structured as counties, cities, boroughs, municipalities, townships, and special districts (U.S. Census Bureau, 2022a). Holmes et al. (2020) stated that local governments are more important than the federal government, as local government decisions have more effect on citizens' daily lives. The leaders of local governments are usually referred to as commissioners and, oftentimes, they do not work within the government building during office hours. Instead, elected officials provide the structure and support to employees and the public during normal business hours.

The commissioners have the responsibility to make executive decisions and oversee the performance of the local government. Commissioners are elected by residents through a voting system and often hold terms of four years. Commissioners remaining on the board for decades by being reelected at the end of their term is not uncommon. These individuals are often over the age of forty and are long-time residents of the governing county (Holmes et al., 2020). The U.S. Census Bureau claims that the percentage of individuals in the United States obtaining a bachelor's degree has increased by a factor of 10 over the course of the past decade (U.S. Census Bureau 2022b). The vast majority of first-time bachelor's degree earning individuals are within the age of 20. The environment of local governments is typically comprised of middle-aged individuals who do not have a college education. However, as local government workers start to retire, their jobs requirements are often updated and require a bachelor's degree of the newly hired (State and Local Government Jobs, 2022).

Internal Controls

Internal control mechanisms need to be in place and must be followed by employees within local units of government in order to reduce the likelihood of fraud, embezzlement, and asset misappropriation. The American Institute of Certified Public Accountants (AICPA) defines internal controls as a process that provides reasonable assurance in regard to financial operations (Compliance Supplement 2020). The goal of internal control is to ensure that organizations are performing workplace functions effectively and efficiently within the scope of legal regulations (Koo & Ki, 2020). Internal controls also help enhance the equality of financial reporting and provides citizens of local governments' positive reassurance (Rice & Weber, 2012).

Since U.S Congress passed the Sarbanes-Oxley Act of 2002, businesses, organizations, local governments and even consumers have become more aware of the consequences faced as a result of internal control weaknesses. Sarbanes-Oxley was put into effect to help protect investors by establishing in depth financial regulations, such as enforcing additional controls to safeguard data (H.R.3763 - 107th Congress). The Committee of Sponsoring Organizations of the Treadway Commission (COSO) defines internal controls as organization-wide operational effectiveness. COSO also suggests that internal controls have five main components which are as follows: 1) risk assessment, 2) control activities, 3) control environment, 4) monitoring information, and 5) communication activities (Guidance on internal control n.d.).

Research has shown that the passing of the Sarbanes-Oxley Act has made a positive impact on financial reporting standards, but it does not ensure that all necessary controls are being implemented (Rice & Weber, 2012). Local governments, specifically in the United States have less strict reporting requirements in regard to internal controls (Graves et al., 2004). Kurpierz and Smith (2020) claimed that such municipalities are more likely to have internal control weaknesses than that of publicly traded companies because of the knowledge available to the consumer markets that correlates to each. Local governments are funded through the monies of taxpayers, but in most cases, taxpayers do not research to see how their government is allocating their money which opens an opportunity for asset misappropriation.

Monitoring

When internal controls are implemented in an organization, they need to be monitored for maximum effectiveness. Approaches throughout the last decade have become more simplified, which means the internal controls surrounding those updates should be updated to reach maximum support. Monitoring can take form of evaluating mechanisms from an outside perspective; by doing this, weaknesses will become clearer (Cheng et al., 2018). Al Abbadi et al. (2021) studied 100 counties in the United States and noticed that 92 of those local governments did not have a system in place to monitor their internal controls.

Weaknesses

Internal control weaknesses have the following four categories: 1) technical, 2) operational, 3) administrative, and 4) architectural (4 Types of Internal Controls, 2023). The identification and determination of fraud and weaknesses can be determined by these classifications of internal control within a business or government. Fraud is one major outcome that may have lasting implications from having weak internal control systems. Fraud can occur in any establishment, especially when large amounts of money and responsibility are in play (Koomson, 2020).

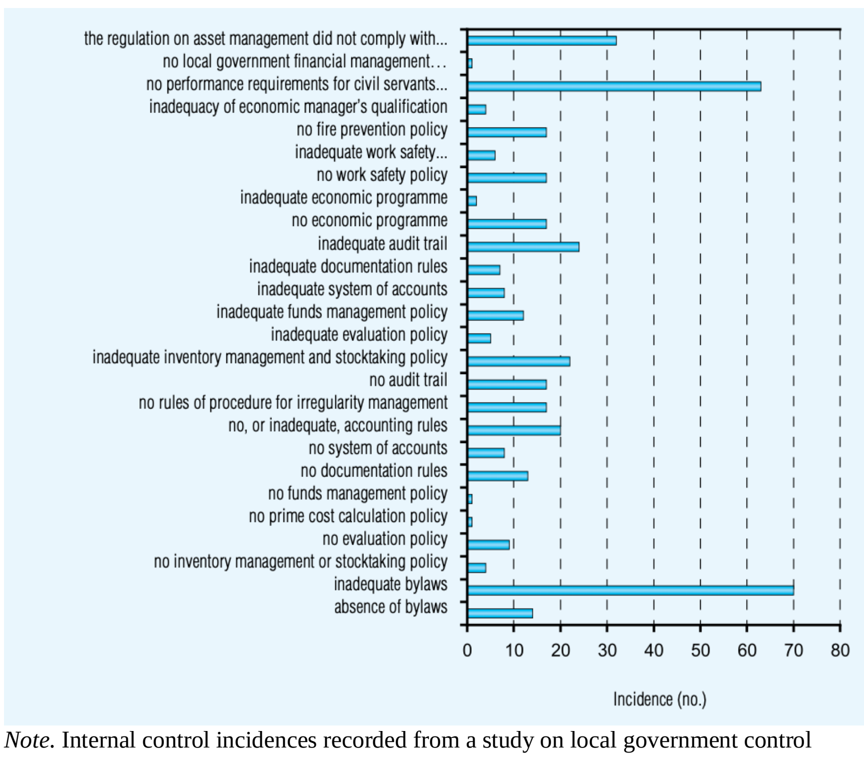
Technical control weaknesses are caused when an establishment has a breach of security within a computer or network. This can leave the organization vulnerable to cyber-attacks and possible leak of information, resulting with restricted information being used or seen to unauthorized individuals. This is important when dealing with places within a government that have access to confidential information, like bank account numbers and social security numbers (4 Types of Internal Controls, 2023). Operational weakness inside of the government can have an impact on how effective fraud control can be. Assessing risks within a business's daily operations helps prevent the spread of fraud and provides checks of assets. The day-to-day checks on important information should be done regularly to catch mis-entered or lost information. When this is done often, errors are more likely to be caught as the time between the event and the finding of the solution will be close (4 Types of Internal Controls, 2023).

Risk Assessment

Local governments attempt to reduce risk by performing annual risk assessments or reviews of assets and investments. These reviews help determine the likelihood of a loss occurring. Studies have indicated that local governments often have one of the following four risk assessment violations: absence of risk analysis, non-effective risk analysis, risk management that is not linked to the risks, and failure to record asset obligations in the bylaws (Benedick et al., 2019). Research has not been able to conclude which activities link to these violations directly, but it has been determined that when risk assessments are not effectively presented, significant deficiencies in the control environment of the workplace exist. Figure 1 details the deficiencies associated with the control environment of local governments.

Figure 1

Control Environment Deficiencies within Local Government



Note. Internal control incidences recorded from a study on local government control deficiencies. From Benedek, M., Tubak, K., & Béres, D. (2019). *Official home page of the Sao of Hungary*. ÁSZ - Állami Számvevőszék. https://www.asz.hu/en

Most of these deficiencies could be reduced or eliminated through the use of financial management controls. The largest weakness shown in Figure 1 is inadequate bylaws; the reasoning behind this is because often times the bylaws are out of date and new bylaws are not passed. While the absence of an audit trail on Figure 1 appears to have a low number of incidences, a lack of an audit trail is one of the worst control weaknesses as it can allow for asset misappropriation (Benedick et al., 2019).

Asset Misappropriation

Although the most common type of occupational fraud is asset misappropriation; asset misappropriation is something that is not strongly addressed through the process of audit. With the help of a fraud risk framework, auditors can help assess and respond to areas where asset misappropriation may occur before it actually occurs (Kassem, 2014). Koomson suggests implementing a structural analysis model to determine how employees rationalize misappropriation of assets in the workplace (Koomson, 2020).

As depicted in Figure 2, the Association of Certified Fraud Examiners released a 2022 report suggesting that governmental agencies have the highest median loss in terms of USD ($) out of all fraud cases studied. An additional study was then conducted which concluded that 46% of all government fraud is at the national level. Local level government fraud is about 30% of all government fraud reported, with a median annual loss of $125,000. Of the cases considered in Certified Fraud Examiners report, nearly all have been classified as having poor internal controls, which allowed for asset misappropriation (ACFE Report to the Nations, 2022).

Figure 2

Median loss incurred by organization type (USD)

Private Firm	Public Company	Non-profit	Government
$120,000	$118,000	$138,000	$60,000

Median loss incurred by government type (USD)

National	State	Local
$200,000	$56,000	$125,000

Local Government Fraud

Figure 2 portrays how fraud can take place in many forms within different types of organizations. Further research suggests that fraud is more likely to occur in organizations with small employee counts. Entities with a small workforce do not typically have multiple employees completing the same task, which eliminates work being double checked. Having only one individual responsible for any certain task is an internal control weakness and can be eliminated by training multiple employees on the same skill.

Local governments in small towns and villages do not have accessibility or funds to provide employees with proper training (Kurpierz & Smith, 2020). The employees working within local government often hold their job for a large number of year and do not want additional training beyond their first year of work. In order for organization to see improvements, the employees must be willing to improve their own attitudes and work ethics. Local governments often have a minimum of five departments and studies have shown that the more departments or individuals in an organization, the harder it will be to experience positive improvements (ACFE Report to the Nations, 2022).

One of the major reasons that governmental agencies fall victim to fraud is due to the pressures that governmental officials face. Some of these pressures can be backed by personal status, while others are driven to perform their job to the best of their ability and ensure debt avoided, even if unethical approaches are made along the way. While it may appear that there is a strong code of ethics and internal controls, years of unethical behaviors may be hidden but still have current implications (Holmes et al., 2020). Such fraud and misappropriations may be directly linked to the nature of the environment.

Governments in general, often have very low employee turnover rates, local governments have even lower employee turnover rates. While it often a perceived benefit to have low turnover, it can soon become problematic when employees are not expanding their knowledge as processes improve. Similarly, it becomes much harder to detect errors within work if it has been done by the same employee for decades without change. Local governments are most capable of pursuing fraud due to the fact that their demographic is not aware of what they are actually doing day to day (Lin & Shih, 2018).

Opportunities for fraud are even more widespread in local governments than that of public entities, because of the authoritative guidance at the forefront. Local governments are operated with guidance by an elected board. The individuals on such boards typically have a wealth of knowledge and experience in the topographical location but lack professional financial knowledge. Similarly, current employees working in the local government often only have a high school diploma as the highest level of education completed. These deficiencies allow for a weakened control environment within the nature of local government entities (Sukmadilaga, 2022).

Lack of Control Mechanisms

The only way that fraud is possible is through lack of control mechanisms. In order to prevent frauds such as asset misappropriation, organizations need to eliminate all opportunities to do so. Through a study of local government audits, it has been determined that that over 70% of local governments in the test group had one or more deficiencies related to internal control. Such deficiencies range from needing to establish updated controls to revisiting the policies and procedures associated with certain controls. However, studies suggest that local governments abide by reporting controls since there was less than 5% of local governments in the test group with a deficiency in this area. An example of a reporting control would be the County Controller reporting financial updates to the County Board who then presents findings at the State level (Rezaee, 2005).

Control Procedures

Internal controls are developed to ensure that workplace procedures are in compliance with Generally Accepted Accounting Principles (GAAP) policies. COSO has five internal control concepts; those concepts can affect the organization in one of three ways. Internal Controls are used to positively affect a company's operations, compliance with governing rules and regulations, and financial reporting. With respect to the internal control that coincides with financial reporting, there is a strong need for operational efficiency to be met daily. The day-to-day operation of a business is directly affected by the surrounding environment and control mechanisms. When a material misstatement is reasonably possible, a material weakness within the control procedures develops. Examples of internal control material weaknesses include the failure to reconcile account balances, inadequacy in terms of separation of duties, lack of oversight and/or governance. When an internal control weakness is recognized through audit, it must be reported to the public under SEC regulations. When the weakness occurs, the organization needs to perform a risk assessment and decide if the weakness will result in financial misstatements (Ray, 2011).

Of the local government cases studied, it was evident that most governments do not have control systems in place that catch weaknesses. A KPMG survey study ascertained that governmental control systems are often left on the back burner, which is the biggest reason for fraud within local municipalities (KPMG, 2022). A St. Louis law firm states that fraud is only possible when a weak fraud triangle exists. A fraud triangle consists of the opportunities, motive and pressures associated with the fraud rationalization which will be discussed in further detail to follow (Kniepmann, 2022).

Control Improvements

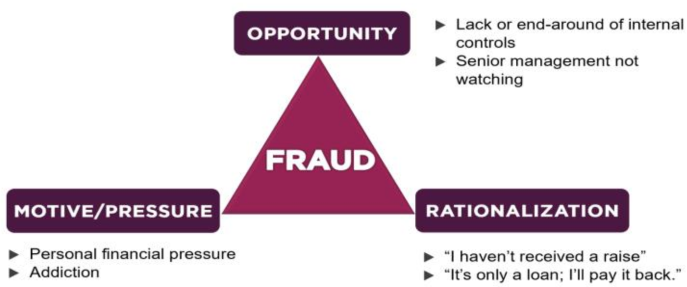
When an auditor or employee notices that internal controls are needing improvements, they should first consider the impact that would be made on financial statements. Numerous studies have shown that local governments need control improvements in at least one of the following areas: cash management, receipting, inventory tracking, and within investment growth logs. Findings suggest that auditors are likely to issue a going concern within the audit if entities fail to make control improvements after a number of years. However, implementing control improvements throughout a whole organization takes a great amount of time. Changes may be difficult to influence since all employees must be aware of the changes being made and some individuals may be set with their current ways that they would be reluctant to change (Rice & Weber, 2012).

Fraud Triangle

The framework of a fraud triangle can be used to determine how and why an organization or an employee within an organization committed fraud. Figure 3 shows the characteristics of a fraud triangle as the three points being opportunity, motive, and pressure. Studies have shown that the largest reason for fraud occurring is that this is an opportunity to do so. In an idea world, all opportunities for fraud would be eliminated through the use of internal controls and good moral character.

Figure 3

Fraud Triangle



Note. Components of the fraud triangle are opportunity, motive/pressure, and rationalization. From Kniepmann, C. (2022, September 28). *Fraud triangle: Fraud opportunity: St Louis CPA firm*. Anders CPA. https://anderscpa.com/the-fraud-triangle-three-conditions-that-increase-the-risk-of-fraud/?tag=fvl.

When opportunities are eliminated there is no possibility of fraud. However, someone will always find a loophole allowing for an opportunity for fraud, so organizations cannot confidently state that all fraud opportunities are eliminated. Studies have indicated that one of the best ways to reduce the opportunity for fraud is to create an organizational hierarchy within the organization. By having a hierarchy, a system of checks and balances will form, and upper-level management will gain oversight to the operations made by the organization (Kniepmann, 2022).

The second point of the fraud triangle framework is the pressures and motives that an individual experiences. Daily, all employees are likely to face pressure within the workplace, when the employee acts irresponsibly on those pressures, the chance for fraud increases tenfold. The largest pressure behind financial fraud of employees is due to the financial hardships that the individual is personally facing.

An example of this would be an employee working in payroll who is struggling to make ends meet so they adjust their wages without authorization to receive higher pay.

This act of fraud is only possible when there is an opportunity, which means that two points of the fraud triangle taking place. Firstly, there should be a separation of duties so that employees working in payroll are not allowed to pay themselves. Similarly, this example would only be possible if payroll operations were not being double checked by another employee (Kniepmann, 2022). Organizations can implement counseling services to help decrease the likelihood of employees feeling pressured to commit fraud. Such services can help employees understand and move through the challenges that they are facing outside of work. While general supervisors do not need to act as a counselor to employees, studies have indicated that employees are less likely to have outside pressures after their work if they feel conversation with their supervisor is comforting (Stalebrink, 2007).

The rationalization behind why individuals pursue fraud is very difficult to detect because there is no paper trail that follows rationalization. Again, for an individual to rationalize fraud needs to be an opportunity to do so. The actual rationalization part of the crime develops within the brain so the reasoning cannot be determined by an outsider. Oftentimes the individual committing financial fraud edits their personal code of ethics to justify their wrongdoing. When this happens, the criminal feels as if they should face no repercussions because what they did “made sense” (Stalebrink, 2007).

When all three elements of the fraud triangle are put to use by an individual within an organization, fraud is maximized, internal controls are very weak, and the control environment of the workplace is debilitated. While pressure is the largest contributor to fraud, it would not be possible without an opportunity. If organizations such as local governments consider the triangle fraud framework, they not only can improve weaknesses within their internal controls, but they can help prevent fraud and enhance employee work experience. Local government workers may feel a pressure to have their finances look a certain way, since they are responsible for allocating taxpayer dollars (Kniepmann, 2022).

In order to combat such pressures, open communication is necessary. When taxpayers understand exactly how, when why and when their money is being allocated, employees will feel less pressure to portray items in a certain way, which reduces the chance for asset misappropriation and theft (Kniepmann, 2022). An example of fraud that follows the fraud triangle is falsification of timecards. Employees often rationalize the opportunity to lie about hours worked in order to receive higher pay as they feel a pressure to make more money than they do (Burnham & Gorokhov, 2022).

Separation of Duties

Separation of duties is an internal control mechanism that auditors seek to find. In optimal environments, tasks that yield monetary value have multiple employees working together. When there is more than one individual working on a task, the opportunity for fraud decreases. Auditors suggest having separation of duties whenever possible, but this becomes a change for smaller entities and local municipalities. Local governments typically have less than two hundred total employees amongst the various departments. This means that multiple tasks are assigned to one individual, whereas in a corporate setting the same tasks would be distributed amongst a team of employees (Peng et al., 2019).

Continency Theory

Maulidi defined contingency theory as the idea that leaders directly impact the structure and operations of an organization. Leaders can have an array of personalities, but how a leader presents themselves to their organization can have effects on workplace performance. When leaders are generally pleasing and easygoing, employees often take advantage of them and will try to get any will anything that they can. This creates an opportunity for fraud to exit. In order for leaders to not get walked over, they need to come off as knowledgeable and assertive. Studies have shown that leaders with this type of leadership do experience financial fraud from their employees (Maulidi, 2022).

Auditors

Auditors play a large role in determining if a company or local government has efficient internal control procedures; the Board of Directors or Board of Commissioners hold the responsibility to follow through with those internal controls. Regulations set by the Securities and Exchange Commission (SEC) enforce auditors to consider internal controls within the company and reduce risks through substantive tests. These regulations do not require auditors to help implement needed internal controls, however many auditors will do so at an additional cost. Local governments often do not consider paying auditors more, so the necessary updates that are needed are usually not implemented (Al Abbadi et al., 2021).

Case Study Example

A recent case from an undisclosed local government in Iowa reporting the findings from a financial fraud situation. The government agency operated from within a county courthouse and through forensic auditing fraud was investigated and analyzed. Due to the nature of the case and that the case still an ongoing issue, many details were intentionally avoided. However, it has been determined that the county clerk at the time has been charged with cash theft after setting their office on fire. The county clerk knew their actions were going to become public knowledge, so they may have rationalized starting a fire to cover up evidence and focus attention elsewhere. If proper internal controls were developed and implemented within this local unit of government, the county clerk would not have been able to steal cash. One simple procedure to eliminate this would be through cash reconciliation and using pre-numbered receipts to account for cash transactions (Solsma et al., 2021).

A researcher conducted a study on the counties within New York, based on audit findings. Of those counties, weakened control environments were noted for over half. Only nine counties were deemed as good control environments. While not all countries had control deficiencies, areas of internal control improvements were noted by the auditors (Sukmadilaga, 2022).

In 2019, the Office of the Washington State Auditor released a statement discovered through an audit of a county guilty of misappropriation of assets. Washington State has been recognized to have been misappropriating funds for at least three years, resulting in nearly $7,000,000 in losses. This act of fraud was discovered through a yearly audit when out of state wire transfers were being questioned. After investigation, it was determined that the financial director was transferring government money to her person account but disguised it by labeling it as legitimate vendors. The results of this case were the finance director being terminated and the case is still ongoing due to COVID-19 related setbacks (Hagemann, 2020). The fraudulent financial director has yet to be sentenced but will face upwards of 20 years in state prison according to U.S. District Judge Bryan. This individual will also have to repay Pierce County $6,900,000, but the trust of the Pierce County public has been significantly altered due to this asset misappropriation (Former Pierce County, 2021).

Capital Assets

Governmental agencies, such as local municipalities house a vast array of capital assets, typically with high monetary value. Studies indicate that local governments often fail to keep a log of all capital assets owned. When this importance becomes known to employees or the public, capital assets will begin to go missing. This is because where there is no proof for when an item should be located or if the item still exists, an opportunity for theft arises. Employees may even create false disposal of asset reports to hide their theft. Local governments and all organizations as a whole, should be accountable for their capital assets. By keeping a log of purchasing date, item location and a maintenance log of each capital asset, theft of local government assets will significantly decrease (Kassem, 2014).

Additional Controls

Since the nature of governmental work is generally very large, additional controls need to be implemented to address various operations. Expenditure fraud occurs when an employee accepts to review reimbursement for faulty expenses through the use of fake receipts. To combat expenditure fraud, local governments have recently put controls into place to authorize transactions. Similarly, local governments have been making their due diligence to source items from the most cost-effective sources. Furthermore, local governments set a threshold of typically $5,000 in purchasing power. This means that additional approval and written agreements need to be carried through with purchases over this amount. The concerning factor is that this does not eliminate the chance for fraud. To have total clarity all purchases should receive authorization by someone other than the purchaser (Defond & Lennox, 2017).

Local Government Internal Controls

Local governments receive three main different types of tax payments from their citizens which are as follows: property, sales, and other taxes. The largest source of revenue comes from citizens' property taxes. While shocking to most people, federal government revenue only accounts for 4% of annual revenue in most county governments (State and Local Revenues, 2020). Studies have shown that citizens often wonder what their tax money is going to but avoid incurring due to possible hassles. However, Anderson has researched citizens' take on local government control procedures and concluded that citizens have mixed feelings.

A survey provided to Midwest counties indicated that the general public believes internal control mechanisms should be routinely updated. The survey also detected that the public believes that strong internal controls indicate that the local government is operating efficiently through properly planning and allocating resources. The public also believe that confidence is built from local governments with internal control. A surprising factor that was mentioned by a citizen is that they would prefer if their local government does not always seek out the cheapest option in terms of vendors. Instead, it would be preferred if local governments supported local small businesses. While this may be more expensive than other options, it shows citizens that the local government values the talents within the local community.

Consequences of Internal Control Breaches

It may be no surprise that poor actions have lasting consequences; this holds true with local units of government that are at fault for asset misappropriation. Asset misappropriation and financial fraud will reduce the quality of financial reporting. In most cases, employees will be dismissed or fired when they are at fault for a financial crime. While most of these crimes are taken to court, the individual committing the crime does not usually end up being held accountable.

In the worst-case scenarios, governments with financial fraud will receive material weakness through audit. When this occurs, revenue sharing at the state level could be eliminated which creates further financial issues for the government (Holmes et al., 2020). Studies of taxpayer opinions that result from local government asset misappropriation have been inconclusive. Asset misappropriation causing worry for taxpayers is a probable assumption, but surveys have shown that taxpayers assume that their money is being poorly allocated to start with and that it causes shock to find out that assets have been misappropriated (Sukmadilaga, 2022).

Growth of Counties

When a county has exponential growth, the money received from local governments likely increases. The increased flow of tax dollars results in additional work within the local government. Oftentimes such work must be carried out by the same individuals without pay raises or additional workers. This means that the responsibility of individuals increased, and an effective approach would be to increase internal controls.

One issue associated with growing counties is that employees cannot grow as fast and keep up with their workload. The COVID-19 pandemic created a world of confusion and as a result many individuals moved their families out of cities and into more suburban areas. These suburban areas received an influx in population and most of the local governments could not keep up with work due to the increased tasks. When counties receive a growth in population they can apply for additional funding sources, which often do not have clear requirements or regulations. When this occurs, there is an opportunity for financial theft to take place.

RESEARCH FINDINGS

The 2022 occupational fraud study report from the Association of Certified Fraud Examiners has shown that, out of all governmental fraud cases, the fraud was internal. Internal fraud is acts of crime at the hands of the employees. Such examples of internal financial fraud include collusion, theft, payment fraud through expense inflation, avoidance of billing family and friends, and skimming. ACFE (2022) concluded that out of all the governmental fraud cases they studied, approximately 60% was a result of corruption. ACFE (2022) then evaluated the local government fraud cases and determined that oftentimes when corruption occurred within the local municipalities it was often conducted by high-ranking officials.

A study on governmental financial malpractice, indicated that municipalities failing to reconcile bank statements had the highest amounts of fraud. When employees know that bank statements are not being reconciled, an opportunity to charge items and cash checks in the government's name exists. Similarly, audit reports have shown that governments do not deposit cash receipts in a timely manner. When cash receipts are not updated the cash on hand is not accurate or known, which results in higher risks (Graves et al., 2004).

FUTURE RESEARCH

After providing a brief overview of internal controls associated with local governments, it can be concluded that there is not enough research available. Work within local governments is highly detailed but current governmental research has gaps within the data. While consequences are a sensitive subject, is it something that is not addressed enough. By providing detailed consequences from real cases, individuals can be deferred from making decisions similar to those in the case.

Current governmental research focuses on the implementation and reinforcement of internal controls. The areas of asset misappropriation and intentional theft remain unexplored. Furthermore, behavioral characteristics have been overlooked in past studies as well as technological advancements. This means that there is a strong need for additional research within the realm of local government internal control and asset misappropriation studies.

RESEARCH LIMITATIONS

The scope of the analysis that can be drawn from local government cases is rather limited, especially in regard to current data. While local government does not receive as must pressures as publicly traded companies, local governments still do not want negative press releases available to the general public. Auditors are often the sole finders of asset misappropriation in local governments; auditors must follow strict guidance that does not allow for additional conclusions to be drawn beyond the audit of the municipality. Since budgeting taxpayer dollars is a right for citizens to know, explicitly researching areas of misappropriation should also be a right to citizens.

The Association of Certified Fraud Examiners is a beneficial resource for the general public to enhance their knowledge on fraud. However, their work is not enough; additional organizations need to come together to exploit local government wrongdoings. Additionally, enhance guidance should be implemented and enforced by the Governmental Accounting Standards Board (GASB). Governments should be the most ethical organizations in the world, however room for fraud and malpractice exists as a result of lenient guidelines.

CONCLUSION

Establishing internal controls within local units of government is crucial for the growth of the community, satisfaction of taxpayers and the overall integrity of financial reporting. Studies have shown that local governments face financial fraud as a result of poor internal controls. The control environment of the majority of researched local governments has been determined as weak. The consequences of asset misappropriation and financial fraud within the local government is at the loss of the local government.

Since local government employees control the outcomes of the local government, their actions should be held accountable. By having annual training sessions, losses within the workplace could be minimized and all regulations would be met.

Additionally, the characteristics of authoritative individuals should also be considered before they are put in leadership positions, because their attitudes affect the integrity of the local government. Finally, by understanding the significance of internal controls within the workplace, procedures and outcomes can reach maximum efficiency.

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Journal of Business and Accounting
Vol. 16, No 1; Fall 2023

THE US STOCK MARKET SECTORS OF SHARE REPURCHASES: AN EMPIRICAL ANALYSIS

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ABSTRACT

This empirical analysis delves into the relationship between share repurchases and diverse sectors in the US stock market. It aims to uncover patterns in how industries engage in share repurchases and respond to evolving regulations. Using a comprehensive dataset spanning a specific period, the study evaluates the impact of these repurchases on market dynamics and investor behavior. It also examines the interplay between share repurchases, dividends, sector-specific trends, and regulatory changes to enhance our understanding of their implications on stock pricing, investor motivations, and corporate governance across sectors. Using the Bloomberg Professional Service (2019-2023), Bloomberg Terminal data, the study assesses the impact of share repurchase practices across all sectors, with the strongest effects observed in the financial and technology sectors. Notably, share repurchases have a more pronounced impact when companies possess high levels of free cash flow. Additionally, the study evaluates the influence of buyback practices on market dynamics and investor behavior. Overall, this research contributes to a nuanced understanding of how these factors collectively shape the dynamics of the US stock market, offering valuable insights for policymakers, investors, and corporate decision-makers.

Key Words: Share Repurchase, Sector, Capital Structure, ANCOVA

INTRODUCTION

Stock buybacks, or share repurchases, have long been common in the US financial landscape, but they've gained renewed attention and sparked new debates in recent years. This strategy involves a company repurchasing its own shares from existing shareholders, reducing the total publicly available shares (York, 2018). While seen as a way for companies to benefit current shareholders, manage excess cash, and boost stock performance, stock buybacks have also stirred controversy and concerns regarding their impact on various stakeholders and the broader economy (Lewis and Joshua, 2021).

Historically, stock buybacks have been used by companies as a tool for capital allocation and financial management. By repurchasing shares, a company can increase earnings per share (EPS) and potentially boost the stock price, which can

be beneficial for existing shareholders, including executives who often receive compensation in the form of stock options. Additionally, buybacks can be a tax-efficient way to return capital to shareholders compared to dividends.
In recent years, stock buybacks have gained renewed attention for several reasons (Zweig, 2023 and SEC (2020). First, the magnitude of buybacks of certain companies, particularly in the technology and financial sectors, have engaged in massive buyback programs, using substantial portions of their profits to repurchase shares. Critics argue that this practice can divert funds away from investments in research, development, and employee compensation. Second, critics of income inequality point out that stock buybacks can increase income inequality, as a significant portion of the benefits often go to wealthy shareholders and executives. This has led to calls for reform and greater scrutiny of executive compensation packages tied to stock performance. The third reason is the economic impact debate about whether stock buybacks contribute to economic growth or hinder it. Some argue that buybacks can stimulate economic activity by returning capital to shareholders who may reinvest it elsewhere. Others contend that they divert resources away from long-term investments and job creation. Fourth, the recent regulatory changes from Whitehouse and regulatory bodies (SEC) have been considering changes to the rules governing stock buybacks. These new regulations may include increased disclosure requirements, restrictions on the timing of buybacks, or limits on the amounts that can be repurchased. lastly, the debate and political and public scrutiny of buybacks have become a prominent political issue, with politicians and the public expressing concerns about their impact on the economy and society. Thus, stock buybacks are a financial strategy with a long history, but their prominence and impact have evolved over time. They continue to be a subject of debate and discussion, with various stakeholders weighing the benefits and drawbacks of this practice, and policymakers considering potential regulatory changes to address the concerns surrounding stock repurchases. The evolving landscape of buybacks echoes broader shifts in the world of investment, corporate governance, and the role of new corporate tax strategies (Chen and Obizhaeva, 2022).

WHAT ARE SHARE BUYBACKS AND WHY DO THEY MATTER?

Typically, buybacks are carried out in one of three methods: 1. Open Market (Market Price), 2. Tender Offer (Fixed Price or Dutch Auction), and 3. Direct Negotiation. When a company decides to buy back its own shares using the Open Market, there is no legal obligation for it to complete the repurchase program. This is the most popular method of share repurchase because it affords the company the highest level of flexibility among the three methods. Additionally, this method can be very cost-effective if the timing of the share repurchase is carefully chosen to minimize the impact on the share price level while taking advantage of any undervaluation of the shares.

Buybacks can signal that a company's management believes the market has undervalued its stock. By reducing the number of outstanding shares, companies can increase the value of the remaining shares. According to Corporate Finance Institute (CFI), there are three primary forms of buybacks: Open Market, Tender Offer, and Direct Negotiation. Open Market buybacks provide companies with the most flexibility as there is no legal obligation to complete the program. This method is popular and cost-effective when timed well to minimize share price impact and capitalize on undervaluation. Companies use buybacks for several reasons. First, they signal management's belief in the stock's undervaluation, thereby boosting the value of remaining shares. Second, they offset dilution, which can occur due to employee stock options or equity-based compensation programs, maintaining ownership levels for shareholders. Third, buybacks efficiently return excess cash to shareholders, often with tax advantages over dividends. In essence, buybacks can signify confidence in management and offer a tax-efficient way to return capital, especially when corporate executives participate. While not always the best use of capital, they allow companies to invest in themselves when they expect favorable returns for shareholders. Evaluating a company's motives for buybacks is crucial for investors.

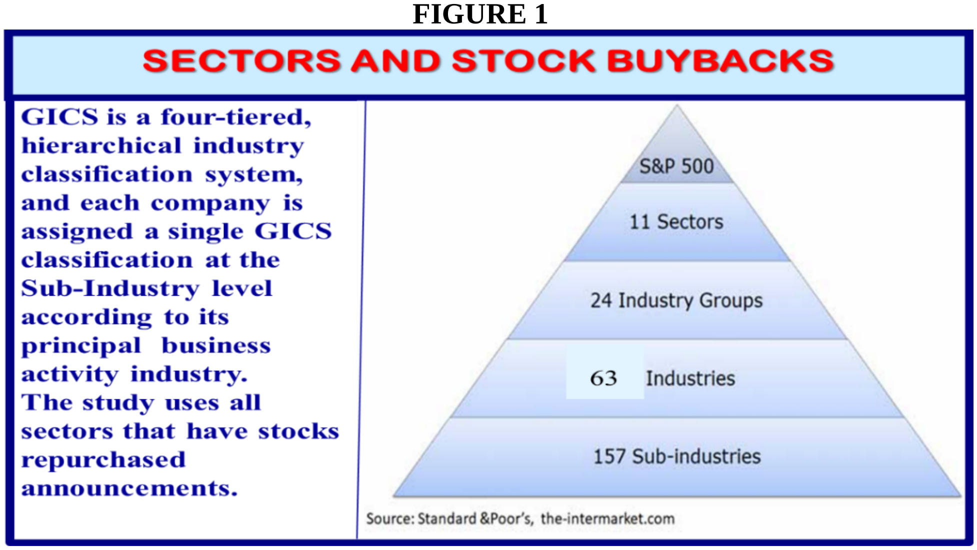
ARE SHARE BUYBACKS GOOD OR BAD FOR INVESTORS' LONG-TERM GOALS?

In the realm of finance, finding a definitive answer to the question at hand is often elusive. What's critical to grasp is that stock buybacks entail a reduction in the number of outstanding shares, effectively retiring them from circulation. The impact on a corporation and its remaining investors can vary, depending on its total assets (comprising debts and equity). When scrutinizing key ratios like EPS (Earnings Per Share) and P/E (Price-to-Earnings), the stock's EPS rises, leading to a decrease in the P/E ratio, assuming the stock price remains constant. Similarly, ratios such as ROA (Return on Assets) and ROE (Return on Equity) improve as the denominator decreases, resulting in increases in both. However, it's worth emphasizing that the consequences of buybacks can fluctuate based on factors such as the company's overall financial health, growth prospects, and the motivations driving the buybacks. Consequently, determining whether share buybacks ultimately benefit or harm long-term investors necessitates a nuanced assessment of the specific circumstances surrounding each company's buyback program (Wohlner, 2023). Consequently, financial analysts, economists, and regulators remain divided on whether stock buybacks are a positive signal from companies, and uncertainty persists regarding how new taxes and rising interest rates might influence future stock buyback trends (Carlson 2023).

SECTORS AND STOCK BUYBACKS

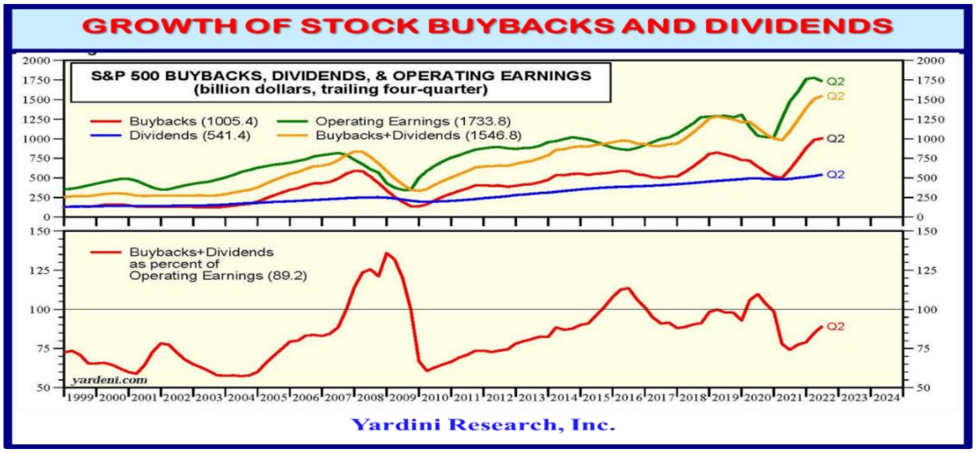
While extensive literature exists on share repurchase (SR) research, this study uniquely connects CR with specific sectors in the U.S. economy, marking a pioneering empirical effort. As of June 30th, 2023, the U.S. stock market's total market capitalization is $46.2 trillion, categorized into eleven sectors by the Global Industry Classification Standard (GICS, 2023): Communication Services, Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Information Technology, Materials, Real Estate, and Utilities. Investors can access these sectors through individual stock purchases, sector-focused funds like exchange-traded funds (ETFs) or mutual funds, or by investing in broad market indices. Sector composition plays a pivotal role in sector rotation strategies, akin to tactical asset allocation, where investors adjust their allocations across sectors based on short-term perspectives.

FIGURE 1



The rising proportion of earnings allocated to stock buybacks and dividends signifies a notable trend where companies prioritize returning profits to shareholders instead of reinvesting in the business or pursuing alternative growth avenues. This shift is driven by factors such as investor pressure for immediate returns, tax advantages, and a focus on elevating stock prices. However, it has sparked a contentious debate regarding its sustainability and potential to impede long-term economic growth (Lazonick, et al. 2020). Tech companies, in particular, have faced investor demands for swift returns, resulting in increased dividends and sizable buyback programs aimed at enhancing short-term shareholder value and stock prices. Additionally, favorable tax treatment in the United States, with lower capital gains tax rates compared to ordinary income tax rates, incentivizes companies to return capital through buybacks and dividends rather than through increased wages or research and development investments. Critics argue that this emphasis on short-term shareholder returns may divert resources away from innovation, capital investment, and employee compensation, all of which are crucial for long-term competitiveness and economic growth. This debate underscores the tension between immediate shareholder interests and the broader economic consequences of this shift in corporate behavior (See Figure 2).

FIGURE 2



Differences in cumulative stock growth rates are apparent across various sectors, capital structures, and market capitalizations in the US markets (refer to Figures 3 and 4). An analysis by S&P and Dow examined the applicability of the S&P 500 Buyback Index methodology, which emphasizes equal weighting and exhibits a small-cap bias, to the S&P Mid-Cap 400 and the S&P Small Cap 600. The findings demonstrated the effectiveness of buybacks in both mid- and small-cap indices in the United States. The percentages of dividend-paying companies have shown relative consistency among different market capitalization tiers, with approximately 80% for large-cap, 60% for mid-cap, and 48% for small-cap companies. However, from 1994 to 2020, the prevalence of companies engaging in buybacks has increased across all market capitalization segments, with the large-cap sector exhibiting the highest participation (Yardini, 2023).

FIGURE 3

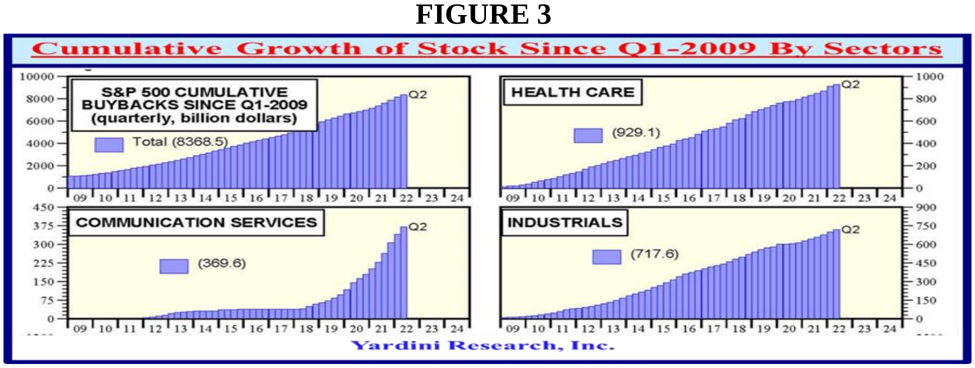


FIGURE 3-CONTINUED

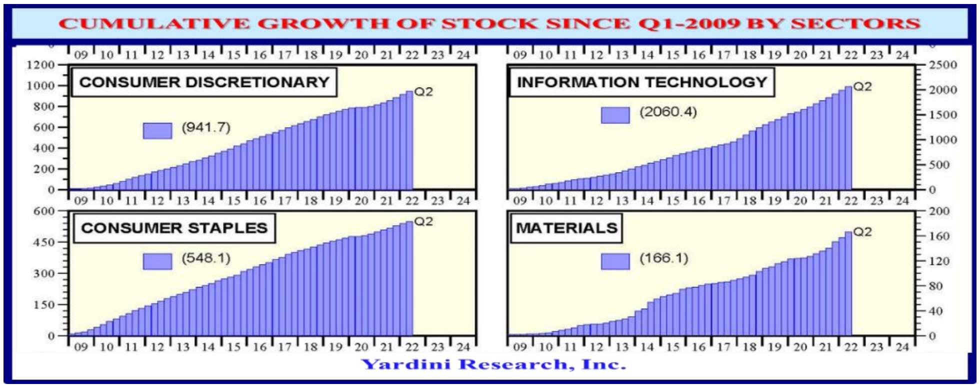


FIGURE 3-CONTINUED

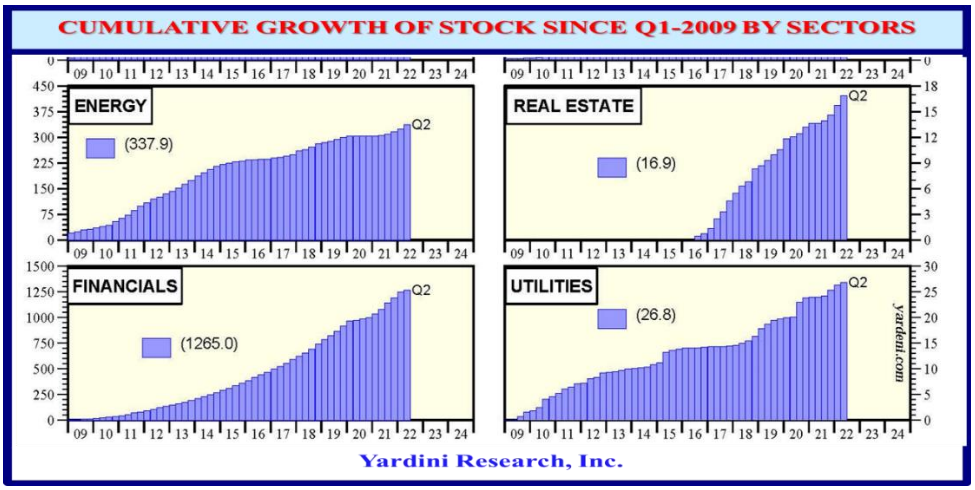
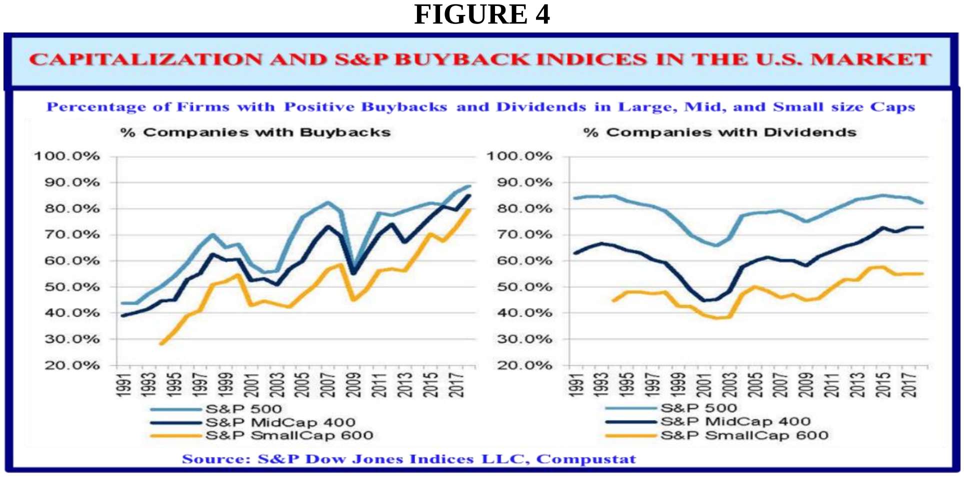


FIGURE 4



Although share buybacks and dividends both serve the purpose of distributing capital to shareholders, they have evolved differently over time. Buybacks, a potent tool for managing leverage, can complement and strengthen the impact of debt issuance on a company's capital structure. When a company repurchases its own shares, it reduces equity and increases leverage, especially when funded through debt issuance. For instance, consider a company with $1,000 in assets, $300 in debt, and $700 in equity, resulting in a leverage ratio of 30%. A $100 buyback funded by trading assets would raise the leverage ratio to 33.33%, while a buyback funded by $100 of new debt would increase the leverage ratio to 40%.

Dividends can also influence leverage similarly to buybacks, but there are notable distinctions between the two. Firstly, firms are generally more observant about reducing dividends because they provide dependable income to investors. On the other hand, Buybacks, offer greater flexibility and can be utilized for one-time cash windfalls. Secondly, while managers may use buybacks to artificially inflate earnings per share (EPS) and stock prices, dividends have no effect on EPS and mechanically reduce stock prices on ex-dividend dates. Lastly, dividends are primarily associated with mature firms, whereas buybacks are common among both high-growth and established companies. In fact, since 1997, the proportion of US companies engaging in buybacks has surpassed those paying dividends, according to Farre-Mensa et al. (2014).

DATA AND SELECTION OF VARIABLES

We collected data from Bloomberg Terminal, spanning from 2019 to February 2023, covering approximately 14,000 companies in the Investable Universe. After excluding firms without a specific sector, our sample size was reduced to 3,000. We further refined the sample, resulting in 1,092 valid observations, ensuring complete variable information and suitability for Pearson correlation and ANCOVA analysis, following Said and Powell (2020) for model specification and variable selection. We ultimately selected 9 variables from an initial 25, focusing on the top 5, including the categorical Fixed Factor variable, Sector. To account for varying value scales, we applied natural logarithm transformations.

VARIABLE DEFINITIONS AND MODEL SPECIFICATION

Dependent variable (DV): LNValRep represents the logarithm of Total Value of purchases (a scale variable). Independent variable (IV, Fixed Factor): Sector (11 categorical groups). Covariate variables (CV): LNMKTCAP, LNRev, LNAsset, LNEq, and CashDiv (all scale variables).

SUMMARY STATISTICS Table 1

Descriptive Statistics

Dependent Variable: LNValRep

Sector	Mean	Std. Dev.	Obs.	% of Total
Comm	18.386	3.25	42	4%
Consu. Dicr.	18.402	2.56	169	15%
Consu. Stapl.	17.721	2.66	61	6%
Enegy	17.200	3.03	48	4%
Financials	16.996	3.16	286	26%
Health	18.517	2.96	72	7%
Industrials	17.717	2.50	193	18%
Info Tech	18.832	3.01	131	12%
Materials	17.928	2.73	65	6%
Real Est	16.918	3.42	8	1%
Utilities	15.525	1.85	17	2%
Total	17.797	2.94	1092	100%

PEARSON CORRELATIONS Table 2

VAR. Name		LNValRep	P/E	LN MKTCap	LNRev	EPS	CashDiv	LNAsset	LNEq	D/E
LNValRep	Corr	1								
	N	1144								
P/E	Corr	-0.036--								
	N	1144	1144							
LNMKTCap	Corr	.744**	0.014	1						
	N	1144	1144	1144						
LNRev	Corr	.712**	-.088**	.870**	1					
	N	1144	1144	1144	1144					
EPS	Corr	0.015	-0.013	-0.008	-0.006	1				
	N	1144	1144	1144	1144	1144				
CashDiv	Corr	.329**	-0.037	.484**	.417**	0.007	1			
	N	1144	1144	1144	1144	1144	1144			
LNAsset	Corr	.473**	-.098**	.435**	.416**	-0.027	.292**	1		
	N	1144	1144	1144	1144	1144	1144	1144		
LNEq	Corr	.509**	-0.048	.481**	.474**	-0.028	.311**	.908**	1	
	N	1092	1092	1092	1092	1092	1092	1092	1092	
D/E	Corr	-0.044	0.024	-0.030	-0.034	0.010	-0.023	-.257**	-.169**	1
Total	N	1143	1143	1143	1143	1143	1143	1143	1091	1143

**. Correlation is significant at the 0.01 level (2-tailed).

To examine their correlations, additional variables were included in the correlation matrix but not used in the ANCOVA model. ANCOVA is a statistical method that combines the principles of ANOVA and regression. It is used to compare the means of a dependent variable (DV) across levels of one or more categorical independent variables (IV) and across one or more continuous variables (covariates). The five selected variables can then be used as a means to eliminate unwanted variance on the dependent variable, allowing higher level of test sensitivity. Adding reliable and necessary variables to these models typically reduces the error term. It is used to test the main and interaction effects of a categorical variable on a continuous dependent variable, controlling for the effects of selected other scale variables (the covariates), which co-vary with the dependent. This can remove the source of variance due to the covariate when evaluating between-groups effects when certain assumptions are met. The ANCOVA tests whether the means of a DV are equal across levels of a categorical IV, while statistically controlling for the effects of other scale variables that are not of primary interest, known as Covariates or nuisance variables. Our single-factor ANCOVA model is shown here:

LNValRep = f (Sector, LNMKTCAP, LNRev, LNAsset, LNEq, CashDiv)

HYPOTHESIS AND DATA ANALYSIS

H_0 = The means of LNValRep variable are equal across all sectors.

Our objective is to refute the null hypothesis stated above and demonstrate that all the slopes of the regression lines (represented by the b coefficients) are indeed equal, which implies that the regression lines maintain parallelism. It's essential to note that the null hypothesis and alternative hypothesis in Analysis of Covariance (ANCOVA) closely resemble those in Analysis of Variance (ANOVA). However, there's a crucial conceptual difference: in ANCOVA, we've adjusted the populations (specifically, sector means) for the covariate. In practical terms, the null hypothesis in ANCOVA posits that there is no statistical difference among the adjusted sector means. This adjustment is critical as it considers the influence of the covariate, providing a more refined understanding of the relationships and differences among the sectors. By testing this null hypothesis, we aim to ascertain whether any variations observed in the sector means are statistically significant when we consider the covariate's impact, ensuring a more accurate assessment of the true underlying differences between the sectors.

ANCOVA RESULTS AND ANALYSIS Table 3

Sector	Mean	Std. Dev.	Obs.	% of total Obs.
Comm	18.386	3.251	42	3.85%
Consu Dicr	18.402	2.560	169	15.48%
Consu Stapl	17.721	2.659	61	5.59%
Enegy	17.2	3.031	48	4.40%
Financials	16.996	3.164	286	26.19%
Health	18.518	2.964	72	6.59%
Industrials	17.717	2.498	193	17.67%
Info Tech	18.832	3.011	131	12.00%
Materials	17.928	2.730	65	5.95%
Real Est	16.918	3.423	8	0.73%
Utilities	15.525	1.8471	17	1.56%
Total	17.797	2.9365	1092	100.00%

ANCOVA RESULTS AND ANALYSIS Table 4

Levene's Test of Equality of Error Variances[a]

Dependent Variable: LNValRep

F	df1	df2	Sig.
1.753	10	1081	.065

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.[a]

a. Design: Intercept + LNMKTCap + LNRev + LNAssets + LNEq + CashDivi + Sector.

If the p-value for the Levene test is greater than . 05, then the variances are not significantly different from each other (i.e., the **homogeneity assumption** of the variance is met). If the p-value for the Levene's test is less than . 05, then there is a Significant difference between the variances.

ANCOVA RESULTS AND ANALYSIS Table 5

Tests of Between-Subjects Effects

Dependent Variable: LNValRep

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5942.724[a]	15	396.182	123.021	<.001	.632
Intercept	684.179	1	684.179	212.449	<.001	.165
LNMKTCap	391.322	1	391.322	121.512	<.001	.101
LNRev	85.938	1	85.938	26.685	<.001	.024
LNAssets	14.163	1	14.163	4.398	.036	.004
LNEq	13.269	1	13.269	4.120	.043	.004
CashDiv	18.576	1	18.576	5.768	.016	.005
Sector	302.709	10	30.271	9.400	<.001	.080
Error	3465.199	1076	3.220			
Total	355267	1092				
Corrected Total	9407.923	1091				

a. R Squared = .632 (Adjusted R Squared = .627)

Table 4 shows the F-statistics for all variables (i.e., p-value < alpha=often 0.05) were significant at less than 1% level, with the exception of LNAssets and LNEq they were significant at the 5% level. These suggest that there are statistically significant differences among the sector means after adjusting for the covariate(s). The effect size measure (i.e., partial eta-Squared) also show magnitude of the differences among sector at the .5% level. In summary, ANCOVA is a powerful technique that allows us to assess sector differences while controlling for the effects of continuous/scale covariates. When results are significant, it indicates that sector differences exist even after accounting for these covariate effects, making it a valuable tool for researchers.

ANCOVA RESULTS AND ANALYSIS Table 6

Estimated Marginal Means

1. Grand Mean

Dependent Variable: LNValRep

Mean	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
17.527[a]	.091	17.349	17.704

a. Covariates appearing in the model are evaluated at the following values: LNMKTCap = 22.1, LNRev = 21.63, LNAssets = 22.23, LNEq =20.986, CashDiv= 423,958,679.

The marginal mean for our IV (Factor) is different from the observed mean. When we have covariates in the model, the estimated marginal means will be adjusted for the covariates. Again, they'll differ from observed means of each sector. It works a bit differently than it does with a factor. For a covariate, the estimated marginal mean is the mean for each group of the IV at each specific value of the covariates. Therefore, we interpret the estimated marginal means of our IV as the mean of each sector formed at the means of the covariates. The basis for them is what SPSS calls the reference grid for a given model. To obtain the reference grid, we consider all the predictors in the model including the covariates.

ANCOVA RESULTS AND ANALYSIS Table 7

Estimated Marginal Means

2. Sector

Dependent Variable: LN Val Rep

Sector	Mean	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
Comm	17.943[a]	.278	17.398	18.489
Consu Dicr	18.427[a]	.144	18.145	18.709
Consu Stapl	17.422[a]	.233	16.966	17.878
Enegy	16.975[a]	.264	16.456	17.494
Financials	17.660[a]	.125	17.414	17.907
Health	17.651[a]	.216	17.227	18.076
Industrials	17.677[a]	.132	17.418	17.937
Info Tech	18.459[a]	.162	18.141	18.777
Materials	17.481[a]	.226	17.037	17.925
Real Est	17.981[a]	.638	16.729	19.233
Utilities	15.117[a]	.436	14.261	15.973

a. Covariates appearing in the model are evaluated at the following values: LNMKTCap = 22.1, LNRev = 21.63, LNAssets = 22.23, LNEq =20.986, CashDiv= 423,958,679.

ANCOVA RESULTS AND ANALYSIS Table 8

Estimated Marginal Means of LNValRep (DV)

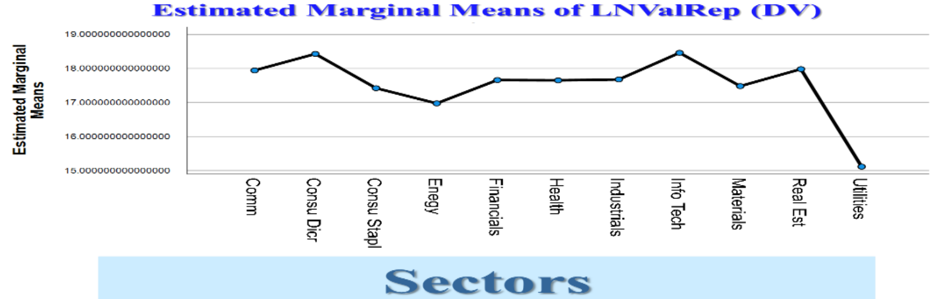


Table 8 shows a profile plot of one factor (Sector) shows whether the estimated marginal means are increasing or decreasing across levels. Financials, Health, and Industrials would exhibit a parallel line (i.e., no interaction across sectors) while other show more interactions among covariates.

IMPLICATIONS

In this study, we investigated share repurchase (SR), a practice in which a company uses its cash or borrowed funds to buy back its own outstanding shares from the open market. SRs have gained popularity across various sectors of the S&P 500 as a means for companies to return capital to shareholders, enhance stock prices, and improve earnings per share. Using Bloomberg data, we conducted an analysis of variance (ANCOVA) to assess whether eleven sectors exhibited similar mean values of SR portions, while controlling for several covariates. Our findings revealed significant differences in the adjusted means among these sectors.

Companies may employ buybacks to counteract share dilution stemming from stock-based compensation plans, such as employee stock options or restricted stock units. Capital structure, a crucial aspect for corporations, pertains to how they finance their operations and growth by combining debt and equity. The decision on capital structure involves determining the optimal mix that minimizes the cost of capital while maximizing shareholder value. SR can impact a company's capital structure, especially if financed through debt, potentially increasing its leverage ratio. A higher leverage ratio can be advantageous if the company generates returns higher than the cost of debt. However, it also raises the risk of default and financial distress if earnings and cash flows decline. Moreover, debt-funded SRs may deplete cash reserves, limiting the company's ability to invest in future growth opportunities, potentially leading to an unfavorable capital structure if returns fall short.

In summary, SR can significantly influence a company's capital structure and financial performance. Firms must carefully consider the costs and benefits of SR, including its impact on leverage, cash reserves, and investment capacity. Additionally, SRs have sparked controversy and criticism, with ongoing debates among companies, policymakers, and regulators about the advantages and risks associated with this increasingly prevalent corporate strategy.

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Journal of Business and Accounting
Vol 16, No. 1; Fall 2023

A REVIEW OF THE SECOND DECADE OF THE PCAOB AT WORK

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ABSTRACT

The Public Company Accounting Oversight Board (PCAOB), created in 2002, oversees the audits of public companies and other issuers to protect the interests of investors and further the public interest in the quality of audit reports. In this study, we review PCAOB inspections and enforcement actions for eight firms (Big-4 and four second-tier firms) from 2009-2020 to assess the level of regulatory oversight and whether the scrutiny seen in the early years is maintained. Since the Big-4 firms manage over 78% of all U.S. public audits, the two-tier sample is adequate. Our analysis revealed a gradual decrease in the percentage of audits showing deficiencies, the severity of deficiencies, the number of firms that fail to address quality control criticisms satisfactorily, and the extent of enforcement actions. In addition, we identified common weaknesses related to the same recurring auditing standards and noticed a downward trend in the frequency of occurrence. The downward trend may suggest an improvement in audit quality over time. However, whether the results point to improved quality or a diminished appetite for regulatory oversight on the part of the PCAOB is debatable.

Key words: PCAOB, Regulatory Oversight, Big-4, Deficiencies

INTRODUCTION

The Public Company Accounting Oversight Board (PCAOB) came into existence in 2003 to oversee the work product of firms auditing public companies. It is charged to (1) conduct inspections of registered public accounting firms to assess compliance with laws, rules, and professional standards, (2) issue guidance and rules to enhance the quality and transparency of audits, (3) enforce compliance with laws, rules, and professional standards through disciplinary proceedings, (4) develop and maintaining an active international program to promote cooperation and coordination with foreign securities regulators and accounting standard setters, (5) conduct research to improve the effectiveness of the audit process and promote investor protection, (6) address various emerging risks to the integrity of the financial reporting process.

With twenty years of oversight and authority over the auditing profession, it is essential to review and understand the PCAOB's activities as it continues to shape the auditing profession. This paper provides an update on PCAOB activities for the past ten years (see Abernathy, Barnes, and Stefaniak, 2013 for a summary of the first ten years of PCAOB existence). We examine both inspection reports and enforcement actions over the past ten years, from 2009-2020. Prior studies have mostly examined one or the other not both. Our sample consists of the "Big-4" firms and four second-tier firms. The Big-4 audit approximately half of all public companies; the top ten account for approximately sixty-seven percent of the audits of public companies in 2021 (Murphy, 2021).

BACKGROUND

Before the creation of the PCAOB, no independent regulatory body was overseeing the audit industry. Instead, the audit profession self-regulated itself through peer reviews under the American Institute of Certified Public Accountants (AICPA) (Tanyi and Litt, 2016). The PCAOB shifted the audit industry from a peer review system to one of regulatory oversight. This new entity represented a fundamental change in audit standard setting and the independence of public accounting firms (Kinney, 2005).

The PCAOB operates under the auspices of the Securities and Exchange Commission (SEC). It is subject to the rules and orders promulgated by the SEC which also appoints (and removes) the members of the board. Of the five-member PCAOB's board, no more than two members can be CPAs. The PCAOB's own rules, are not effective unless approved by SEC, which also happens to approve PCAOB's annual Budget. Adverse inspection reports and disciplinary action are also subject to SEC review.

Although the SEC approves PCAOB's annual Budget, the funding is not appropriated by Congress (i.e. not taxpayer funded). It's funding comes from annual accounting support fees levied on corporate issuers in proportion to their equity market capitalization, and the registration fee that all accounting firms and broker dealer entities must pay. PCAOB is in 83 jurisdictions across the globe with 1,709 public accounting firms registered as of December 31, 2021. The following fee schedules shows larger firms pay substantially more than smaller (local) firms.

For the past six years, the PCAOB's revenue and expenses, by and large, have remained steady with an exception of 2018 when the revenues declined approximately 12% compared to 2017, followed by recovery in 2019. PCAOB maintained its operating budget even through the pandemic period (2020-2021). The PCAOB currently has 891 employees. For 2022, its budgeted personnel costs were $230 million, non-personnel costs were $80 million, and the capital expenditures were a modest $52,000. Fee schedules, fee revenue, and operating expenses are as follows:

REGISTRATION FEE SCHEDULE	
Number of Audit clients in Preceding Year	Application Fee
0-49	$500
50-100	$3,000
101-1000	$29,000
1001 and up	$390,000

CURRENT ANNUAL FEE SCHEDULE	
– Firms with more than 500 issuer audit clients and more than 10,000 personnel	$100,000
– Firms with more than 200 issuer audit clients and more than 1,000 personnel	$25,000
– All other firms	$500

FEES REVENUE	OPERATING EXPENSES
2021: $265 million	2021: $262 million
2020: $271 million	2020: $265 million
2019: $264 million	2019: $258 million
2018: $237 million	2018: $252 million
2017: $269 million	2017: $253 million
2016: $255 million	2016: $250 million

As part of its oversight, the PCOAB conducts annual inspections of public accounting firms that perform audits for more than 100 publicly traded companies (clients) and at least triennially for firms with 100 or fewer issuer clients (Daugherty & Pittman, 2009). The PCAOB inspection teams select audits for inspection using a risk-based approach or randomly from the completed audits of the inspected firm. The reviewers often focus on areas of greater audit complexity, greater significance, heightened risk of material misstatement, and recurring audit deficiencies. These inspections and selection methods aim to identify any audit deficiencies in the audits of inspected firms. Any audit deficiencies found are communicated to the inspected firm to determine if they have sufficient and acceptable justification for the identified deficiencies. Each review concludes with an inspection report summarizing the findings. The first part of the report includes significant audit deficiencies that inspected firm could not adequately explain and are publicly available. The second part of the report discusses a firm’s quality controls and is typically nonpublic. However, the second part of the report can become public if the audit firm fails to correct these quality control deficiencies within twelve months of the inspection report issuance date (Nagy, 2014). The process allows the PCAOB to properly inspect audit firms and ensure proper audit procedures have forthwith complied.

Inspection reports are not the only means of ensuring that audit firms comply with best practices and policies. The PCAOB has the power to issue fines.

In extreme cases where violations are so severe, the PCAOB can require public companies to fire an auditor (Coates, 2007). Registered firms with unintentional violations (negligent actions) can be fined up to $100,000 per person and $2,000,000 per firm. For intentional violations, the fines increase to maximums of $750,000 and $15,000,000, respectively (Church & Shefchik, 2014). This ability to issue significant fines on firms is a significant change from the previous seemingly non-punitive peer review system under the AICPA. Another strong deterrent for poor audits is the threat of revocation of registration. The PCAOB also has the power to suspend an individual or firm, either temporarily or permanently, from auditing issuers (Gilbertson & Herron, 2009). The inspections and related enforcement actions are designed to increase overall audit effectiveness and ensure that external users have confidence in the integrity of issued financial statements.

The PCAOB audits the Big-4 firms annually. In comparison, smaller firms are audited triennially (Tanyi & Litt, 2017). This creates a two-tier system where smaller firms receive less frequent feedback than more prominent firms and have a slower learning curve than annually inspected firms that can improve their approach to meet the PCAOB specifications.

Daugherty and Tervo (2010) surveyed the leadership of audit firms subject to triennial (once every three years) inspections. Although they found a "level of satisfaction with nearly all aspects of PCAOB inspections," many smaller firms considered removing themselves from auditing public companies because of excessive compliance burdens. Smaller and medium firms "do not view PCAOB inspections as positively impacting their audit practices" (Daugherty & Tervo, 2010, pg. 214). The survey did find that larger firms, over time and with more experience, gained more from PCAOB inspections. The focus here was on audit firms' leadership perspectives instead of audit performance measures. The general satisfaction appeared to increase with firm size and over time (Daugherty & Tervo, 2010).

Church and Shefchik (2011) studied PCAOB inspection reports of annually inspected accounting firms issued from 2004 to 2009 for eight of the largest accounting firms (including Big-4 firms). The data comprised 48 inspection reports and audit deficiencies. An audit deficiency occurs when the inspection team believes that the inspected firm did not obtain a "sufficient, competent evidential matter" to support the firm's audit opinion (PCAOB, 2009). Not all audit deficiencies are the same, however. The study analyzed the severity and nature of each deficiency and the account(s) impacted. The PCAOB identified a total of 664 deficiencies, representing a "significant, downward linear trend in the total number of audit deficiencies" (Church & Shefchik, 2011, pg. 43). The number of deficiencies in 2009 (n=86) was 44.8% of those in 2004 (n=192) suggesting improvement over time (Church & Shefchik, 2011, pg. 53). These improvements perhaps reflect firms were becoming more familiar with the PCAOB's process and expectations. Over 90% of the audit deficiencies found were common to most firms in the industry, with "revenues" being the most impacted income statement accounts (Church & Shefchik, 2011).

Hollingsworth and Irving (2021) examined the PCAOB's enforcement program from 2005 to 2017 instead of its inspection reports. During this period, the PCAOB issued over 250 disciplinary orders. The number of disciplinary orders increased each year from 2008 with only slight increases in enforcement spending, perhaps pointing to gains in PCAOB's efficiency and effectiveness. A large number of violations (70%) were related to not following audit principles and responsibilities, lack of audit evidence, and inadequate review and communication.

Prasad and Webster (2020) also examined inspection reports (n = 2,985) over an extended period (2004–2018) and found that 1,551 contained audit deficiencies (~52%). Audit deficiencies fell in one of three categories related to (1) Generally Accepted Accounting Principles (GAAP), Generally Accepted Auditing Standard (GAAS), or Internal Controls over Financial Reporting (ICFR). GAAP deficiencies were the most common of the 1,551 inspection reports containing audit deficiencies, then GAAS deficiencies, and finally ICFR deficiencies. The results also varied by firm size, i.e., whether annually or triennially inspected firms. For 74% of triennially inspected U.S. firms, audit deficiencies were due to a failure to follow GAAP, while 17% of annual audit deficiencies were from ICFR deficiencies (Prasad & Webster, 2020). The annually inspected firms deal with larger clients than triennially inspected firms. The most common GAAP deficiencies involved "Revenue Recognition," "Inventory," "Debt," and "Fair Value Measurement ."

Tanyi and Litt (2017) investigated the effects of the PCAOB's inspection reports on financial reporting quality and audit fees. This study focused exclusively on smaller and midsize public accounting firms, whether inspected annually or triennially. Tanyi and Litt (2017) concluded that there was "significantly higher financial reporting quality for clients of annually inspected as compared to clients of triennially inspected firms in the post-PCAOB inspection period, with no such differences for these groups in the pre-PCAOB inspection period" (pg. 148). The study found that under the AICPA's peer review system, the financial reporting quality for larger audit firms (that issue more than 100 reports) was indistinguishable from smaller firms (that issue less than 100 reports).

DATA

We collected 2009-2020 data on eight firms (the Big-4 and four second–tier firms) from the PCAOB website, https://pcaobus.org, The sample was limited to eight firms primarily because the Big-4 firms conduct over 78 percent of all U.S. public audits. The firms selected are Deloitte & Touche, Ernst & Young, KPMG, PricewaterhouseCoopers, Grant Thornton, Crowe, Moss Adams, and RSM. The data for secondary analyses were culled from the "Firm Inspection Reports," "Enforcement Actions," and "Annual Report." The inspection reports identify deficiencies (non-compliance with established standards).

The data include the number of audits examined per firm, number of audits containing deficiencies, audit impacted, severity and number of deficiencies in audits, auditing standards failed, and others. Additionally, we collected enforcement data from 2009–2020 in terms of enforcement spending, disciplinary orders settled, the severity of disciplinary action, and the group impacted by these orders. In the spirit of continuous improvement, we expect a gradual decrease in the severity and number of audit deficiencies along with a reduction in the severity and amount of enforcement actions over time.

ANALYSIS & RESULTS

The inspection reports from 2009–2020 show that the PCAOB changed the format and content of its reports to improve the quality of information.

EXHIBIT 1 (prior to 2018)

INSPECTION PROCEDURES AND CERTAIN OBSERVATIONS

Members of the Board's inspection staff ("the inspection team") conducted primary procedures for the inspection from October 2008 through October 2009. The inspection team performed field work at the Firm's National Office and at 34 of its approximately 61 U.S. assurance practice offices.

Board inspections are designed to identify and address weaknesses and deficiencies related to how a firm conducts audits.[3/] To achieve that goal, Board inspections include reviews of certain aspects of selected audits performed by the firm and reviews of other matters related to the firm's quality control system. Appendix B to this report provides a description of the steps the inspection team took with respect to the review of audits and the review of certain firm-wide quality control processes.

In the course of reviewing aspects of selected audits, an inspection may identify ways in which a particular audit is deficient, including failures by the firm to identify, or to address appropriately, respects in which an issuer's financial statements do not present fairly the financial position, results of operations, or cash flows of the issuer in conformity with GAAP.[4/] It is not the purpose of an inspection, however, to review all of a firm's audits or to identify every respect in which a reviewed audit is deficient. Accordingly, a Board inspection report should not be understood to provide any assurance that the firm's audits, or its issuer clients' financial statements or reporting on internal control, are free of any deficiencies not specifically described in an inspection report.

EXHIBIT 2 (since 2018)

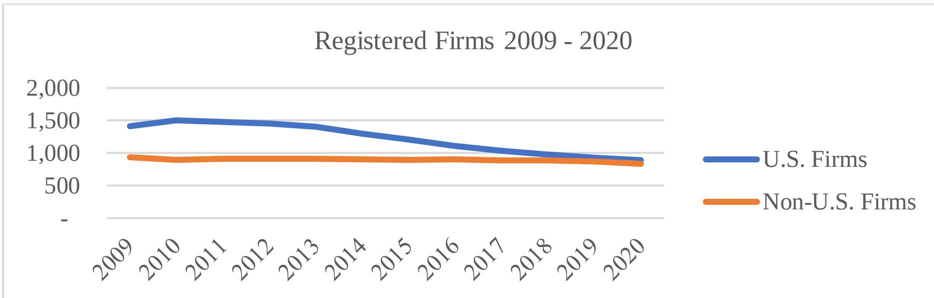
	2020	2019	2018
Total audits reviewed			
Total audits reviewed	52	60	55
Selection method			
Risk-based selections	37	41	45
Random selections	13	14	10
Target team selections[2]	2	5	0
Total audits reviewed	**52**	**60**	**55**
Principal auditor			
Audits in which the firm was the principal auditor	51	58	54
Audits in which the firm was not the principal auditor	1	2	1
Total audits reviewed	**52**	**60**	**55**
Audit type			
Integrated audits of financial statements and ICFR	50	52	45
Financial statement audits only	2	8	10
Total audits reviewed	**52**	**60**	**55**

Essentially, the inspection reports are useful for the public only if they are understandable. For example, before 2018, the PCAOB used a primitive, albeit difficult to read, format for its inspection reports. Exhibit 1 shows a small portion of PricewaterhouseCoopers' (PWC) 2009 inspection report containing several pages of voluminous text, which is time-consuming for readers. In 2018, the sentence-dominated format gave way to a more visual chart-based format. In addition, the length of inspection reports also decreased. As a result, the inspection reports became more user-friendly and understandable, as can be seen in Exhibit 2 - PWC's 2020 Inspection Report.

FIRM REGISTRATION

Firms registering reached a peak in 2010 with 2,397 firms. Since then the number of U.S. registered firms has decreased yearly with only 1,726 firms registered as of 2020 (see Figure 1). The number of non-U.S. registered firms remained relatively constant over time. The decline in registered firms suggests that those firms unable to meet the new PCAOB standards exited the audit market and further market consolidation to the Big-4. The compliance burden eliminated resource-strapped smaller firms from the PCAOB roster, leaving the public company audits to large and more resourceful firms.

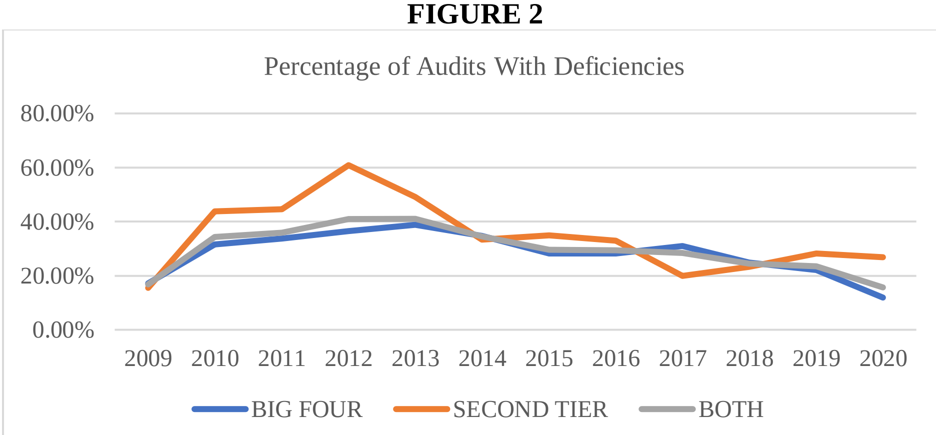
FIGURE 1



AUDIT DEFICIENCIES

From 2009-2020, the PCAOB reviewed the audits of 3,465 public companies across 86 inspection reports for the eight firms in our sample. For the Big-4, the number of completed audits reviewed annually ranged from 50-75 per firm, For the second–tier firms, the number of audits reviewed annually ranged from 8-40. Of the 3,465 audits examined, 1,012 (~29.2%) contained audit deficiencies. Figure 2 illustrates the percentage of audits with deficiencies over time.

FIGURE 2



Following the "Great Recession" of 2008, greater oversight led to the overall rise in percentages of audits with deficiencies from 2009–2012. It is noteworthy that while both Big-4 and second–tier firm audits with deficiencies increased, the Big-4 rate increased significantly less, indicating superior ability to meet the PCAOB's standards. Once audit firms become accustomed to new regulations, the number of deficiencies decreases pointing to improved audit quality over the last ten years. As firms receive more frequent feedback, audit quality tends to improve.

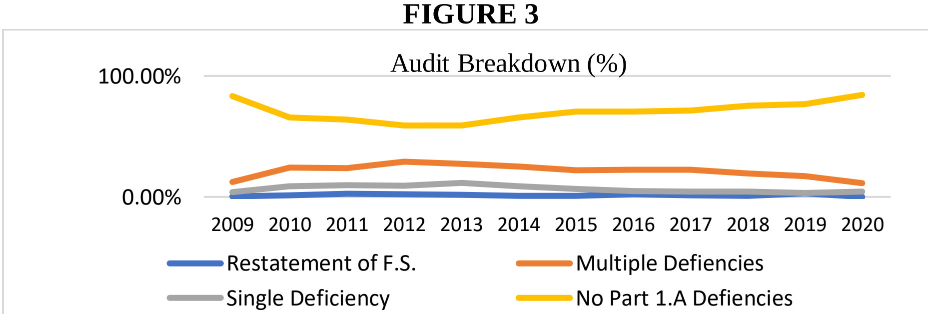
SEVERITY OF DEFICIENCIES

While the PCAOB identified 1,012 audits with deficiencies within the framework of this study, the severity of these deficiencies is not the same. The 3,465 audits inspected fell under one of four general categories: 1) audits with an incorrect opinion on financial statements, 2) audits with multiple deficiencies, 3) audits with a single deficiency, and 4) audits without part 1A deficiencies.

Part 1A deficiencies relate to a lack of sufficient or appropriate audit evidence supporting the audit firm's opinion(s) on the issuer's financial statements or Internal Controls over Financial Reporting (ICFR), also known as audits with unsupported opinions. Audits with an incorrect opinion on financial statements mean that the audit failed to identify significant misstatements resulting in the public company having to restate its financial statements. Figure 3 presents the overall trends for the eight firms. It shows positive developments in audit quality over the last decade. For example, from 2012 to 2020, the percentage of audits containing no deficiency increased from 59.06% to 84.34%. At the same time, the rate of audits having multiple deficiencies decreased from 29.13% to 11.39%, and the percentage of audits containing a single deficiency decreased from 9.45% to 4.27%.

Notably, the most severe type of audit deficiency (resulting in a restatement of financial statements) accounted for less than 3.00%. Overall, this data demonstrates a decrease in the severity of audit deficiencies over time. In addition, the frequency of audits with multiple deficiencies and incorrect opinions is also decreasing. This trend demonstrates that the PCAOB is positively impacting not only the number of deficiencies but also the severity of deficiencies when they occur.

FIGURE 3



AREA OF DEFICIENCIES

The SEC requires public companies with over one hundred million dollars in revenue to produce a financial statement and internal control over the financial reporting (ICFR) audit. The PCAOB is responsible for monitoring the quality and accuracy of both (*Firm inspection reports, 2022*).

The percentage of deficiencies involving both financial statement audits and audit of internal controls (ICFR) slightly increased over the last decade (54.35% to 60.00%) for Big-4 firms. From 2012-2019, a higher percentage of deficiencies were in the ICFR audit than in the financial statement audit. The deficiencies for the second-tier firms offer no clear pattern over the past 10 years. Ideally, audits would contain no deficiencies. A more practical expectation, however, is that deficiencies should be minor and rare instead of major and widespread.

In terms of percentage of audits with deficiencies that impact the ICFR audit, seven out of the last eight years, the Big-4 had a higher percentage of ICFR audits containing deficiencies than the second-tier firms. As expected, the Big-4 have a higher rate as they audit more complex and global internal controls challenges. The difficulty of auditing the internal controls of a fortune-500 company is exponentially more remarkable than auditing a smaller company.

IMPACTED STANDARDS

In 2013, the PCAOB started including more information about the auditing standards associated with Part 1A deficiencies (e.g., how often a particular violation occurs). Therefore, we use data from the 2013-2020 inspection reports to identify the most frequent auditing standards associated with deficiencies and whether there is an improvement over time. Figure 4 and Figure 5 show the five auditing standards most frequently cited in association with audit deficiencies for the Big-4 and second-tier firms.

FIGURE 4

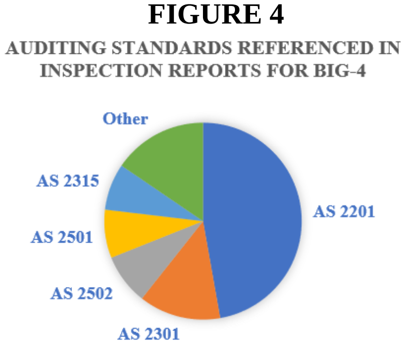
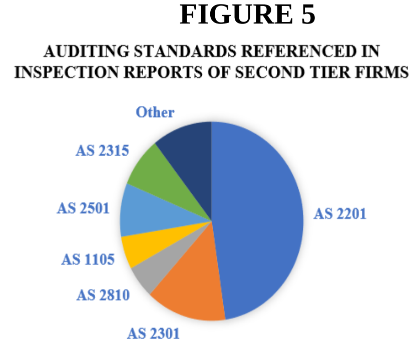


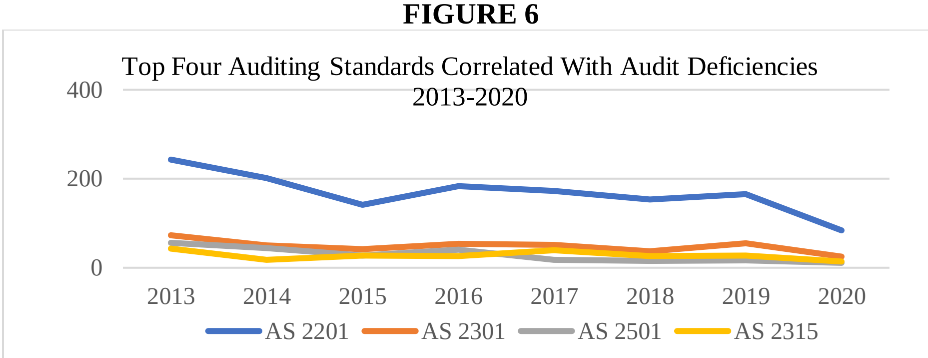
FIGURE 5



Auditing standard AS 2201 (An Audit of Internal Control Over Financial Reporting Integrated with An Audit of Financial Statements) deals with the audit of management's assessment of the effectiveness of internal controls over financial reporting. It was mentioned 2,167 times for Big-4 firms accounting for 47% of all deficiencies. The second most common standard mentioned is AS 2301: The Auditor's Responses to the Risks of Material Misstatement, which accounted for 13% of deficiencies. The following three standards mentioned in order of frequency are AS 2502: Auditing Fair Value Measurements and Disclosures, AS 2501: Auditing Accounting Estimates, and AS 2315: Audit Sampling. Finally, the remaining sixteen auditing standards accounted for only 15% of the deficiencies.

For the second-tier firms, AS 2201 was the most common auditing standard cited 676 times in association with deficiencies. Similar to the Big-4, AS 2201 accounted for 48% of standards mentioned in association with audit deficiencies. The other top five most frequently mentioned auditing standards are AS 2301-The Auditor's Responses to the Risks of Material Misstatement (14%); AS 2501-Auditing Accounting Estimates (9%); AS 2315-Audit Sampling (8%); AS 1105-Audit evidence (5%); and AS 2810-Evaluating Audit Results (8%). The other nine auditing standards were responsible for the remaining 11%. The main takeaway from these two charts is that audit deficiencies occur in both the Big-4 firms and the second-tier firms, with AS2201 being the most frequently cited auditing standard as Figure 6 illustrates.

FIGURE 6



The trend in Figure 7 shows a decline in deficiency citations associated with all four audit standards over time. These trends suggest that the PCAOB is helping improve audits, as identifiable problems are being addressed.

QUALITY CONTROL ISSUES

Inspection reports issued by the PCAOB contain two parts. Part one is public and has audit deficiencies that the PCAOB considers significant. Part two is nonpublic and identifies quality control criticisms. Part two data is not publicly released unless the firm does not satisfactorily "remediate" the PCAOB's quality control criticisms (*Firm inspection reports, 2022*). At first, the PCAOB withholds this information but releases data on the number of firms that fail to "remediate" by the twelve-month mark.

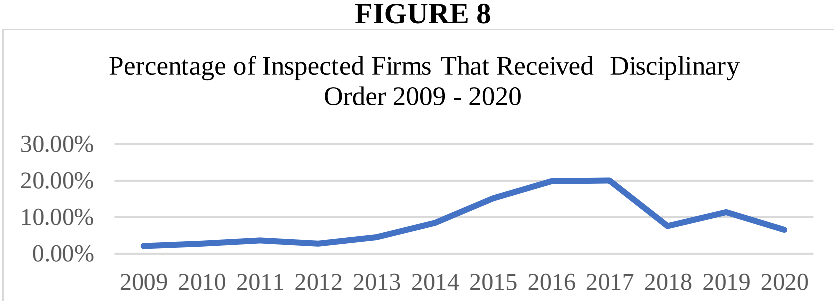
FIGURE 7

From 2018 to 2019, there is a sharp decline in the number of firms failing to address the PCAOB quality control expectations (Fig. 9). A firm's quality control system impacts the quality of its audits; therefore, improving these systems is essential in the PCAOB's mission to improve audits of public companies.

ENFORCEMENT

Another tool at PCAOB's disposal is enforcement actions. Some examples of enforcement actions are fines imposed on individuals and firms, revocation of registration (temporary or permanent), and termination of bars. Figure 8 shows a sharp decline in disciplinary orders just as the new, regulation-averse regime came to Washington in 2017.

FIGURE 8



However, one may argue that the disciplinary orders would decrease over time as firms learn and develop more effective compliance protocols and that the PCAOB is functioning as envisioned. The number of disciplinary orders settled increased from 2009-2016 followed by a decline in 2018, as shown in Table 1.

Table 1 (on the next page) presents the PCAOB's enforcement spending from 2009-2020. The amount of enforcement spending increased gradually until 2015 when it began to plateau and remained at about 22 million dollars per year. Corresponding to the increase in enforcement spending, the number of settled disciplinary orders also increased.

TABLE 1

Year	Enforcement Spending (in millions)	Disciplinary Orders Settled	Year	Enforcement Spending (in millions)	Disciplinary Orders Settled
2009	13.1	6	2015	22.1	44
2010	15.6	7	2016	22.1	54
2011	17.9	8	2017	22.2	54
2012	19.1	8	2018	22.7	20
2013	20.0	13	2019	21.8	30
2014	20.2	24	2020	22.6	17

According to the PCAOB, the increase in enforcement spending was mainly attributable to new staff hires (*Annual report, 2022*). The increased enforcement also sends a message that the probability of being flagged for failure to meet the PCAOB standards was growing, thus, motivating firms to improve operations. As a result, the PCAOB found fewer instances warranting disciplinary action, demonstrating an overall, industry-wide improvement.

CONCLUSIONS

This study provides insight into the impact of PCAOB on audits of some of the biggest registered auditing firms' from 2009 – 2020. PCAOB came into existence to restore public confidence in the capital markets and continues to function in that capacity. However, the PCAOB has seen a decline of 623 registered firms from 2009 – 2020. Firms deregistering demonstrates that the PCAOB's standards and regulations were too burdensome for smaller, resource-strapped firms, prompting them to exit the public company audit market. Since 2012, the PCAOB has also seen a decline in deficiencies for Big-4 and Second-Tier firms. Correspondingly, the severity of the deficiencies has decreased. The percentage of audits with multiple deficiencies or a deficiency requiring a restatement of financial statements has also decreased.

Another indicator of the PCAOB's success is that the number of firms failing to satisfactorily address quality control criticisms decreased from 2009 to 2020. In other words, when the PCAOB finds quality control issues, the percentage of audit firms addressing them by the end of the twelve months has increased. In enforcement actions, the number of disciplinary actions issued has gone down in the last three years. Overall, the PCAOB has seen a decline in the number, severity, and frequency of deficiencies and disciplinary orders and increasing compliance.

For all firms, the auditing standards most often cited in audit deficiencies are AS 2201, AS 2301, AS 2315, and AS 2501. While these four auditing standards have remained the most cited, the frequency of deficiencies linked to these standards has decreased every year since 2013.

Another improvement the PCAOB has made is in its presentation and readability of reports. Starting in 2018, the PCAOB released a new inspection report format, which switched from a sentenced-based account to a more visual, chart and graph-based. In addition, the new reporting format provides data from the previous two years, allowing for year-to-year comparisons.

This study builds on prior research on regulatory oversight and adds to the body of literature with results from the second decade of PCAOB's existence. We contend that PCAOB continues to have a positive impact on audits of public companies, as seen in declining deficiencies and enforcement actions. However, what is not clear is whether these are a sign of improved audit quality or a diminished appetite for regulatory oversight on the part of the PCAOB.

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Journal of Business and Accounting
Vol 16, No. 1; Fall 2023

PREVENTING AND DETERRING OCCUPATIONAL FRAUD DRIVEN BY EXCESSIVE INFLATION

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ABSTRACT

During excessive inflation, business owners may raise selling prices or reduce operating costs to maintain profit margins. For businesses that raise selling prices, customers may move their business; thus, profits may decline. Businesses that reduce the number of employees or decrease wage rates, benefits, or work hours may lose employees, enabling motivated employees to commit occupational fraud. The motivation for these occupational frauds can occur when the remaining employees believe management wrongfully denied requests for pay raises or added more work hours without additional pay. Thus, employees may also commit occupational fraud to obtain retribution. Alternatively, desperate employees may misappropriate and convert employer assets to cash to purchase desperately needed food, clothing, or other items. In addition, reducing controls or having too much trust in employees may motivate some employees to commit fraud. Finally, executives may recognize a need to falsify records to maintain their access to capital. Therefore, business owners, executives, and managers must understand that occupational fraud can flourish for many reasons. As a result, management should develop, implement, and maintain fraud prevention and deterrence controls to reduce potential losses.

Keywords: Inflation, Occupational fraud, Internal Controls, Fraud Prevention

INTRODUCTION

In the United States (U.S.), the Federal Reserve Board (FRB) provides a safe, flexible, and stable monetary and financial system (Federal Reserve Board, n.d.). The Board also attempts to hold inflation at or near an annual rate of 2% (Frick, 2022). In support, other governments also believe price stability exists at or near an annual 2% inflation rate (Miller, 2023). However, recent increases in inflation may have compelled some businesses to increase selling prices and reduce operating costs to maintain profit margins. The result of sale price increases may push loyal customers to competitors. Alternatively, some businesses may reduce operating costs to avoid raising prices; however, reducing operating costs often includes cutting employees' wages or benefits. As a result, employees may become motivated to commit fraud. In effect, many employees would never consider committing occupational fraud; however, during turbulent times, businesses must be vigilant (ACFE, 2009) because employees have bills to pay and families to feed.

When occupational frauds occur, they are the personal enrichment of an employee via the deliberate misuse or misapplication of an employer's resources or assets (ACFE, 2022). When inflation occurs, the price of basic needs can increase while the purchasing power of paychecks decreases. Thus, desperation emerges and motivates employees to find other methods to satisfy family needs or to punish employers.

Most employees will attempt to satisfy family needs by following the rules (Hawke, 2009). Some may ask for additional paid working hours or search for second jobs. Others may attempt to reduce personal expenses and use the savings to reduce debt obligations. However, when employee layoffs occur or paychecks, benefits, or work hours get cut, some employees may use their internal knowledge of organizational weaknesses to misappropriate employer assets. In effect, some employees may view employer assets as a solution to their financial problems. Employees may also view the daily onslaught of depressing financial news as motivation to misappropriate employer assets. Thus, excessive inflation can fuel a [variety of] growing risks that compel employees to commit occupational fraud (Hrncir & Metts, 2012).

If evidence of fraudulent activities emerges, guilty employees may lose their jobs, and courts may force them to make restitution. They may also embarrass friends or family, or worse, destroy their reputations. Further, some fraud perpetrators may earn prison sentences. Unfortunately, some perpetrators may become so distraught about their sinister activities that they take their own lives!

As a result, this study addresses occupational fraud caused by excessive inflation. Recommendations for preventing these frauds include increased internal controls and additional management oversight. If inflation continues to increase, the remaining businesses may choose to raise prices, which may also increase occurrences of occupational fraud. Therefore, this qualitative multiple-case study has reviewed multiple occupational frauds during the Great Recession to identify methods to prevent new and deter ongoing occupational frauds driven by excessive inflation.

LITERATURE REVIEW

Although a small amount of inflation is necessary for economic growth, excessive inflation can financially harm individuals and businesses. Excessive inflation is the amount of inflation that emerges above the expected core inflation (Kemp, 2022) of 2%. Fortunately, most employees would never consider committing occupational fraud. However, some employees may be in a desperate situation. If so, these individuals may rationalize fraudulent acts as an acceptable method for solving personal problems (Hawke, 2009; Steffee, 2009).

When non-sinister employees commit occupational fraud, some form of motivation often exists that compels them to commit fraud. Often, these employees contemplate fraud as a way to purchase needs, repay loans, or obtain an item or desire. Opportunities to commit fraud are also necessary since they enable the motivated employee to conceal the misappropriation. Often, the opportunity is the motivated employee's access to the targeted item, enabling the perpetrator to conceal the misappropriation. In addition, Wolfe and Hermanson (2004) have stated that these motivated employees must have sufficient ego before they *cross the line* and commit fraudulent acts. Finally, rationalization is how the perpetrator justifies the misappropriation. For example, they may believe stealing from the job site was the only way to solve the problem, or they owe me.

Preventing or deterring fraudulent acts often requires controls to be in place *before* the fraud occurs. Prevention controls act to prevent or deter errors or fraud. They often include (1) policies and procedures, (2) authorizations and approvals, (3) reconciliations and reviews, (4) employee support programs, (5) and employee fraud training. In addition, there are preventive controls for hiring new employees, which include background checks, reference verifications, or the confirmation of credentials for individuals applying for jobs (Childers, 2009). In contrast, detective controls exist to find ongoing frauds. Detective controls can include hotlines for reporting suspicious activities and the use of internal auditors. Thus, reducing or eliminating preventive or detective controls may [embellish the ability] of desperate or disgruntled employees to seek revenge on their employer (Hawke, 2009).

Furthermore, preventing or deterring fraudulent acts requires management to understand that *relying on trust* may enable fraudulent activities to occur. For example, a highly trusted employee with unrestricted access to assets has a wife who loses her job with another business. As a result of this loss, the husband may commit fraud to offset his wife's lost wages and use his employer's trust to conceal the theft. Alternatively, management may cut costs by reducing the number of employees. Unfortunately, reducing the number of employees may also reduce the effectiveness of existing controls and make it easier for the remaining employees to commit occupational fraud. Thus, fewer controls increase opportunities for motivated employees to conceal fraudulent acts (ACFE, 2009).

Senior executives may also succumb to altruistic urges to save the business and preserve jobs (Hawke, 2009). These urges can involve *cooking the books* to inflate business revenues. For example, motivated executives may create fictitious sales and fabricate customer accounts to make the business appear to have stellar sales and operating margins. Managers may also implement other methods for manipulating gross sales and margins, including overbilling, shorting shipments, or using inferior parts in production (Holzinger, 2010). Businesses also need day-to-day (short-term) and long-term capital to survive, so executives may commit financial reporting fraud to preserve their access to desperately needed capital (Holzinger, 2010). Further, the temptation to inflate financial results or commit financial statement fraud during tough times may overcome established ethical values (McCollum, 2010). Finally, a flawed *tone at the top* can permeate throughout the business and compel all workers to lie, cheat, or steal to obtain personal needs, satisfaction, or retribution.

METHODOLOGY

This study implemented a qualitative research design to explore multiple occupational fraud cases emerging from the Great Recession Era. Each judgmentally chosen article provided an understanding of why employees commit occupational fraud during periods of excessive inflation and methods for limiting the fraud. The articles also provided an understanding of how employers' actions during periods of excessive inflation can motivate employees to commit occupational fraud and to understand what actions managers can implement during periods of excessive inflation to reduce occupational fraud.

Data for the discussion section came from the Business Source Premier (EBSCO) database. After choosing all of the databases on the EBSCO site, an advanced search took place. Subjects for the search initially included inflation and occupation fraud; unfortunately, no articles emerged. A subsequent search using economic downturns and employee fraud produced fourteen articles. Of those articles, eight provided helpful information for this study.

RESEARCH QUESTIONS

The central question for this study was to identify methods management should use to prevent new or deter ongoing occupational fraud during periods of excessive inflation. The research questions asked:

> **R.Q. #1:** During periods of excessive inflation, what internal activities can motivate employees to commit occupational fraud?
>
> **R.Q. #2:** During periods of excessive inflation, what external activities can motivate employees to commit occupation fraud?

DISCUSSION

While business owners, executives, and managers should understand that most employees start new jobs as loyal employees, they should also understand that loyalty within those individuals can diminish during tough times (Holzinger, 2010). In effect, pressure can push good employees to abuse an employer's trust and misappropriate assets. Further, owners, executives, managers, or employees can easily give into personal problems when excessive inflation emerges. For example, executives may falsify financial reports to obtain operating funds or to maintain their status. Managers and employees may misappropriate assets to pay current expenses or to resolve personal debts. Thus, executives and managers must understand that any worker may be desperate (O'Brien, 2009).

Management also needs to recognize that opportunities to commit fraud increase when layoffs reduce employee numbers or [increase] weaknesses within business control systems (Steffee, 2009). If employee dismissals or employee attrition increases, opportunities to commit fraud may also increase. If the morale of the remaining employees deteriorates, it may be easier for them to justify fraudulent acts (Burrowes, 2009). Some employees may find it easier to look away when a co-worker misappropriates employer assets. Thus, management should realize that curtailing work hours or eliminating employee health benefits may increase opportunities to commit fraud. Also, if employees believe their salary or wage is insufficient, they may find it easier to rationalize fraudulent acts by believing management has cheated them (Haimoff, 2009).

Management should secure inventory and supplies and guard all knowledge of impending layoffs. They should also periodically test existing fraud controls for effectiveness (Burrowes, 2009). Management should watch for ineffective, obsolete, or overridden controls. Accounting entries should be periodically reviewed for unusual transactions (Holzinger,2010). If questionable entries emerge, management and internal auditors should review the entries, and the internal auditors should allocate additional work hours in fraud-sensitive areas (Holzinger, 2010). In addition, cash is a common target for perpetrators, so managers in cash businesses should verify that the cash and bank account controls are in place and working as designed. In non-cash businesses, perpetrators often identify payroll and expense checks (Burnham, 2012) as instruments for moving cash out of the business. Thus, the management of non-cash businesses should separate the roles of authorizing payroll and the payment of expenses, and both actions should be subject to independent reviews (Burnham, 2012). Finally, if the business cannot achieve planned financial targets, there is an increase in the likelihood of occupational fraud (Burrowes, 2009).

During depressed economic times, managers should recognize the potential for occupational fraud and be prepared to implement new policies and controls when necessary (O'Brien, 2009). Significant groups of controls often include preventive, detective, deterrence, investigative, and the prosecution of any identified perpetrators. In addition, each group of controls has value since any misbehaviors may be material, and ignoring these behaviors could send the wrong message to workers (Holzinger, 2010).

Further, management should establish a fraud awareness program to prevent future occupational fraud. Components of this program should include an ethics program that applies to all employees (Haimoff, 2009). In addition, employees and managers should receive training on recognizing the *red flags of fraud*, and the training should include a list of potential fraudulent acts that could occur in each [business or] area (Hall, 2016). Also, executives should periodically communicate anti-fraud policies and procedures and remind all employees about the penalties for committing fraud (Haimoff, 2009).

Constant surveillance may also help managers prevent or deter ongoing fraudulent activities. Reinforcing surveillance programs can include establishing a whistleblower hotline that accepts reports about suspicious activities from all workers, vendors, and customers. Once in place, the whistleblower hotline could collect essential sources of information from internal and external sources (Hawke, 2009). Management must also recognize that whistleblower hotline tips are a double-edged sword since they may provide favorable or unfavorable consequences. For instance, tips are excellent for uncovering misconduct within the organization; however, some employees may use these programs to make anonymous accusations to advance personal agendas. Consequently, management should always verify the credibility of the accusations. (Hawke, 2009).

Alternatively, management should recognize when additional controls are necessary to reduce emerging threats or system weaknesses. While most managers are aware of threats from outsiders, some may not understand how to protect assets from insiders (O'Brian, 2009). As a result, executives or managers may require new training for all workers to reduce or eliminate losses from insiders. Managers should also understand that occupational fraud will likely increase during inflationary periods (O'Brian, 2009). Thus, management should remind all employees that they are actively looking for occupational fraud and will prosecute any perpetrators.

Finally, managers should consider adopting employee support programs to help workers with ongoing and emerging problems, which may also help reduce employees' motivation to commit fraud (Haimoff, 2009). When in place, these programs may help reduce employee fears and uncertainties. Examples of employee support programs often include substance abuse, financial difficulties, relationship issues, or other programs. Managers should always avoid lying or cheating since workers may view these activities as a signal that they are acceptable behaviors within the business.

LIMITATIONS

This study implemented a qualitative study of multiple occupational frauds associated with inflation. Identifying all occupational fraud case information would be impossible since some frauds are never detected. In addition, suspected perpetrators may be dismissed and sent down the road. Unfortunately, these suspected perpetrators may continue their nefarious acts on other unsuspecting employers. Management also detects and prosecutes some perpetrators. So, the number of frauds and the total financial losses associated with occupational fraud can only be estimated. Further, significant inflation has not emerged since the late 1970s and early 1980s. Therefore, the information in this article should not be generalized, and the information may only help in creating fraud prevention programs and controls for businesses.

CONCLUSION

This study focused on identifying internal and external activities that can motivate executives, management, and employees to commit occupational fraud during periods of excessive inflation. Then, use the emerging information to help executives and managers design and implement specific controls that make it difficult for workers to commit occupational fraud. In addition, the emerging information may help reduce opportunities to commit occupational fraud, reduce instances of employee fraud, and improve employee morale.

Management should also periodically review controls and accounting entries for accuracy. They should also continue to review policies and procedures and update these documents when necessary. Executives should implement a fraud awareness program along with a whistleblower hotline that may prevent or deter future occupational frauds. Also, these efforts should signal to all workers that executives, managers, and employees are on the lookout for fraudulent activities.

Alternatively, executives and managers should communicate to all workers that they are concerned about employee well-being by not reducing employees' wages and benefits and limiting worker furloughs. Management should also continue to train employees to identify and report suspicious activities. Finally, management should continually review internal controls to ensure they function as planned.

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Journal of Business and Accounting
Vol 16, No. 1; Fall 2023

THE IMPACT OF JOB EMBEDDEDNESS ON TURNOVER INTENTIONS IN PUBLIC ACCOUNTING FIRMS

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ABSTRACT

Turnover in public accounting firms is an issue that has and will continue to impact firm practice greatly. Changes in the work environment due to the pandemic have led to increased issues with retention in public accounting firms. This study is the first to examine the relationship between a full-time professional employee’s level of job embeddedness and turnover intentions. A survey was used to gather evidence from full-time accounting professionals working in public accounting firms across the United States. With a sample size of 136 full-time employees, multiple regression was conducted to examine if job embeddedness predicted full-time accounting professionals' turnover (retention) intentions. Results indicated that the higher an employee’s level of job embeddedness, the more likely that employee will stay with their current firm.

Key Words: Job embeddedness, job turnover intention, public accounting firms

INTRODUCTION

In the 2021 AICPA’s Private Companies Practice Section (PCPS) survey, retaining qualified Certified Public Accountants (CPAs) was one of the top ten current concerns for all firms with more than two people. Additionally, for those firms with more than two people, recruiting and retention were listed as the top issues that will have the most impact on their practice in the next five years. In a November 2020 survey on the perceptions of organizational support in public accounting firms, Bakarich et al. (2021) found that CPA firm employees perceive that firm and coworker support decreased due to the pandemic. Seniors and staff who participated in the study felt a decrease in gratitude, social interactions, and incentives for hard work while also seeing an increase in mixed communication and workload. Another change created by the pandemic is the question of location.

Now, more than before the pandemic, managers also have to consider the physical location of their employees – are they still working remotely or are they physically in the office? Organizations are deciding what type of mode works best for their customers and for their employees. Some organizations allow for both remote and on-site workers, creating a work environment with opportunities and challenges with which many organizations are unfamiliar.

Regardless of the physical location of where they are performing their daily tasks, employees want to feel a connection to their work and their organization; they want to be embedded in their organization. Mitchell et al. (2001) proposed a new construct to the voluntary turnover prediction literature, job embeddedness. This construct has an on-the-job dimension (the employee's organization) and an off-the-job dimension (the employee's community). By using job embeddedness to analyze turnover intentions, this study shifts the focus from why employees want to leave their public accounting firm to why they want to stay. Higher levels of an employee's job embeddedness should indicate higher levels of employee retention. While much research has been performed in the area of turnover intentions in public accounting in an attempt to understand why employees leave, no research has investigated turnover intentions in public accounting firms within the context of the job embeddedness construct. The pandemic has added pressure to a concern that was already a top issue, retention for public accounting firms. This study examines the relationship between an employee's level of job embeddedness at public accounting firms and their turnover intentions.

LITERATURE REVIEW

Turnover Intentions in Accounting

Based on the seriousness of the issue of turnover in the accounting profession, academic research and popular press articles on this topic are numerous. Organizational commitment, the attachment individuals form with their organization, has been the most widely used theoretical framework applied in predicting voluntary turnover in the accounting profession (Herda & Lavelle, 2012; Ketchand & Strawser, 2001; Nouri & Parker, 2020; Parker & Kohlmeyer, 2005; Pasework & Strawser, 1996). Organizational commitment has three dimensions: 1) affective commitment, 2) normative commitment, and 3) continuance commitment (Allen & Meyer, 1990). Affective commitment is an employee's desire to stay, normative commitment is a sense of obligation to stay, and continuance commitment is a need to stay. Ketchand and Strawser (2001) identified organizational commitment antecedents and categorized them as personal characteristics, role states, job characteristics/work experiences, group/leader relations, organizational characteristics, and costs of departures. The correlates of organizational commitment include satisfaction, involvement, and professional commitment (commitment to one's profession above and beyond the organization for which they work) and the consequences of organizational commitment are performance, turnover behavior, and withdrawal behavior, which includes turnover intentions. Affective commitment has been the dimension most studied in predicting turnover intentions within the accounting profession context (Ketchand & Strawser, 2001).

Few studies have focused on the continuance and normative commitment dimensions in the accounting profession and even fewer have focused on these two commitment dimensions in the context of the public accounting firm. In a study that examined public accountants' commitment to their profession (not to their organization), Smith and Hall (2008) found that neither normative professional commitment nor continuance professional commitment correlated with professional turnover intentions. Stallworth (2003) evaluated the influence mentoring relationships in public accounting firms have on the three dimensions of organizational commitment but found normative commitment was not a significant predictor of turnover intentions.

Accountants' job satisfaction as an antecedent to turnover intentions has been another area widely studied. Harrell and Stahl (1984) used McClelland's (1961, 1965) "trichotomy of needs" theory to analyze why some employees have higher levels of job satisfaction in large public accounting firms while their colleagues in the same firm have low levels of job satisfaction. Higher levels of decision-making authority result in higher levels of job satisfaction and lower levels of turnover intentions in accountants (Dole & Schroeder, 2001). Technostress, a relatively new form of stress created by interaction with information and communication technologies (Brod, 1984), combined with organizational commitment and job satisfaction, significantly predict turnover intentions in public accounting (Boyer-Davis, 2019).

Staff accountants who have higher levels of job insecurity have lower organizational commitment and job satisfaction, which were negatively related to turnover intentions (Pasewark & Strawser, 1996). Parker and Kohlmeyer (2005) examined the influence job satisfaction and organizational commitment have on perceived discrimination in relation to turnover intentions in three big public accounting firms. Lower organizational commitment and job satisfaction were found to be consequences of job burnout that was impacted by junior accountants' higher levels of job tensions, including their perceived lack of information and control and excessive workload (Chong & Monroe, 2015).

Mentoring relationships and role-modeling, as elements of the work environment, and their relationship as antecedents to the three dimensions of organizational commitment, affective, continuance, and normative, were studied in the public accounting firm context (Stallworth, 2003). Mentoring relationships have a higher impact on the level of staff's affective commitment and direct implications on turnover intentions. Stallworth suggests that these relationships have a higher impact on top level staff's continuance commitment (Stallworth, 2003). Hall and Smith (2009) explored two forms of mentoring psychosocial support and career development support. Merely having a mentor does not impact turnover intentions. Career development mentoring increases an individual's sense of empowerment, which is positively associated with turnover intentions (Hall & Smith, 2009).

Job Embeddedness

Mitchell et al. (2001) proposed a new construct to the voluntary turnover prediction literature – job embeddedness. Job embeddedness occurs on the job and off the job – the individual is embedded both in the employee's organization and the community in which the employee lives. Job embeddedness has been shown to be a stronger predictor of turnover intentions than other constructs, such as organizational commitment and job satisfaction (Cunningham et al., 2005; Takawara et al., 2014). It is unique from the other constructs used in turnover intention research in that it is a retention strategy (Robinson et al., 2014) and retention construct (Lee et al., 2004). Off-the-job embeddedness affects employees' decisions to participate (voluntary turnover and volitional absences) and on-the-job embeddedness affect employees' decision to perform (organizational citizenship and job performance) (Lee et al., 2004).

HYPOTHESIS DEVELOPMENT

The three aspects of job embeddedness are link, fit and sacrifice and together they create a network of ties, both in the organization and community, that keep an employee embedded in the organization. Links are the connections an employee has with other people and institutions, both within and outside an employee's organization. Links within the organization would include those with a working team, such as an audit team composed of staff, senior staff, managers, and partners. The quantity and strength of the links influence how embedded an employee becomes. Fit is also both internal and external. Internally, an employee's values and career goals must align with the organizations' culture, requirements, and demands of the jobs. Externally, fit applies to the community and how an individual feels connected to his or her community. Job embeddedness increases when employees' abilities and professional interests are matched with their organization and when they believe they fit in the community (Coetzer et al., 2017). Sacrifice is "the perceived cost of material or psychological benefits that may be forfeited by leaving one's job" (Mitchell et al., 2001, p. 10). Sacrifice includes potential professional losses, such as job title, compensation, and benefits, and personal losses, such as loss of spouse's job, good school systems, and service to local organizations.

In a 2020 literature review, Nouri and Parker (2020) summarized prior turnover research in public accounting research and provided guidance for future research. They called for studies to examine job embeddedness in the context of the accounting profession. Managers of public accounting firms can assist employees in creating links with colleagues by creating a collaborative, respectful work environment. For links in the community, they can encourage their employees to volunteer for causes for which they feel passionate and introducing them to others who have the same passion. Many clients of public accounting firms are businesses whose owners are active in the community. Managers can increase employees' level of job embeddedness by helping employees develop relationships with the clients, whom employees may interact with outside of the firm, and by encouraging involvement in the community. It also takes time to develop respectful relationships with colleagues and clients. The possibility of sacrificing those relationships that took time and effort to build might be too much for an employee to give up, and thus they may be more inclined to stay. Thus, it is hypothesized that turnover intentions are related to job embeddedness.

METHODS

A survey containing demographic questions and other instrument questions was administered to participants. Participants were employees of public accounting firms across the U.S. Emails were sent to all the CEOs/Executive Directors of the 50 CPA state societies, as well as to the leaders of the Greater Washington, Guam, Puerto Rico, and Virgin Island societies, asking for their assistance in distributing the survey to their members. Representatives at public accounting firms of all sizes were contacted in an effort to obtain a sample of participants from small, medium, and large public accounting firms and asked them to solicit volunteers from their firms. Boomer Consulting, a company that consults with over 1,600 CPA firms across the nation, distributed the survey to their listserv of over 15,000 people. Finally, social media platforms, LinkedIn and Twitter, were used to solicit public accounting firm, full-time professional employees. Participation in the survey was voluntary (self-selected) and all survey results were anonymous. No identifying information, such as the name of the participant and their firm name, was collected in the survey.

REGRESSION MODEL

Multiple regression was conducted to examine if job embeddedness predicted turnover intentions of full-time accounting professionals. The model was estimated as follows:

$$TOINT_i = B_0 + B_1 COMM_i + B_2 JSAT_i + B_3 JALT_i + B_4 JEM_i + e_i$$

The dependent variable was turnover intentions (TOINT) and the test variable was job embeddedness (JEM). Control variables for this regression included commitment (COMM), job satisfaction (JSAT), and perceived job alternatives (JALT). The composite scores of job embeddedness, commitment, job satisfaction, and perceived job alternatives were used to estimate the regression model.

MEASURES

The focal independent variable of this study is job embeddedness, and the dependent variable is turnover intentions (retention). Three control variables are commitment, perceived job alternatives, and job satisfaction. The survey contained the measures for job embeddedness, turnover intentions, commitment, perceived job alternatives, and job satisfaction. All survey items regarding the variables (excluding the demographic information) used a 7-point Likert Scale. Job embeddedness, turnover intentions, commitment, and job satisfaction used ratings from strongly disagree (1) to strongly agree (7). Perceived job alternatives used the ratings not likely (1) to very likely (7).

Dependent Variable – Turnover Intentions

Turnover Intentions were measured using 3 items adapted by Nouri and Parker (2013) in a study on career growth opportunities and turnover intentions in public accounting. The three items use the word “stay” / “remain” instead of “leave”, such as “I plan to remain with my current firm for at least a few years.” The job embeddedness construct is considered a retention construct (Robinson et al., 2014), so using these 3 items more clearly aligns with the job embeddedness construct. The term “Turnover Intentions” was used instead of “Stay Intentions” to stay aligned with the literature on turnover intentions of employees. Reliability was measured by Nouri and Parker (2013) using Cronbach alpha and the coefficient in their study was .94. The Cronbach alpha in this study was .93.

Test Variable – Job Embeddedness

In this study, job embeddedness is measured using an adapted version of the short job embeddedness form created by Holtom et al. (2006). Holtom et al. (2006) found a strong product-moment correlation (r = .92) between Mitchell et al.'s (2001) long version and their revised short form. This approach was used by Coetzer et al. (2017), Felps et al. (2009), and Cunningham et al. (2005). Holtom et al.'s short form has 21 items that were all part of the original 40-item measure created by Mitchell et al. (2001). The last three questions in Holtom et al.'s short form are "yes or no" questions. Those questions are not included in this survey as they did not relate specifically to any of the dimensions but rather asked about being married, a spouse who works outside of the home, and owning a home. The 18 items that were included in the survey represent the six dimensions of job embeddedness: organization link, organization fit, organization sacrifice, community link, community fit, and community sacrifice. Items include "I feel like I am a good match for this firm", "I am a member of an effective work group", and "I really love the place where I live". Of the 18 items used, 9 of the items assess the respondents' perception of their embeddedness in their firm and 9 assess their perception of their embeddedness in the community. The use of the 18 items, and not the 21 items, was used successfully by Coetzer et al. (2017) and Felps et al. (2009). The Cronbach alpha of the two studies mentioned above were .88 and .83, respectively. The Cronbach alpha in this study was .88.

Control Variables

The field of study focusing on turnover intentions in the accounting profession is large and the two constructs most used as a lens for these studies are organizational commitment and job satisfaction (Nouri & Parker, 2020). Accountants are in high demand, especially those with experience in public accounting firms, and often have several alternative job options. Given that the focal independent variable in this study as a predictor of turnover intentions is job embeddedness, we wanted to control for those constructs that have been commonly used in other studies and that relate to most accountants with public accounting firm experience. Commitment was measured using a nine-item scale developed by Mowday et al. (1979). This scale has been used in multiple studies done within the accounting profession on organizational commitment and turnover intentions (Aranya et al., 1982; McManus & Subramaniam, 2014; Nouri & Parker, 2013; Parker & Kohlmeyer, 2005). The questions used are from Nouri and Parker's (2013) study on career growth opportunities, commitment, and turnover intentions in public accounting firms. Items included "I talk up this firm to my friends as a great firm to work for" and "This firm really inspires the very best in me in the way of job performance." The Cronbach alpha in the Nouri and Parker (2013) study was .93. The Cronbach alpha in this study was .89.

Perceived job alternatives were measured using a two-item scale created by Mitchell et al. (2001) in their study on job embeddedness as a new construct to study turnover intentions. The two questions focused on the employee's perception of the probability of finding an acceptable alternative to the current job. The Cronbach alpha in Mitchell et al.'s (2001) study was .93. The Cronbach alpha in this study was .90.

Job satisfaction was measured using a global six-item scale used in multiple studies conducted on job satisfaction and turnover intentions within the accounting profession (Ketchand & Strawser, 1998; Pasewark & Viator, 2006; Rusbult & Farrell, 1983; Viator, 2001). Items asked included "All things considered, I am extremely satisfied with my current assignments and responsibilities" and "My current work compares very well to my ideal job." The Cronbach alpha in Rusbult and Farrell's (1983) longitudinal study was .93 and .95 (four different time periods). The Cronbach alpha in this study was .92.

SAMPLE

The survey was open from August 25 to November 27, 2022. Of the 197 participants who opened the survey, 61 were excluded from the data for not answering any of the questions or any questions past the demographic questions, leaving 136 responses before data cleaning. Table 1 presents demographic information about the sample. Of the responses, 42.6% were female and 57.4% male, with the largest percentage aged between 30-39 (32.4%). Other ages were 20-29 (13.2%), 40-49 (19.1%), 50-59 (13.2%), 60-69 (10.3%), 70 and older (4.4%), and not reported were 7.4%. The length of time the respondents worked at their current firm ranged from 0 to 5 years (41.2%), 6 to 10 years (21.3%), 11 to 15 years (13.2%), 16 to 20 years (8.8%), 21 to 25 years (5.9%), and more than 25 years (9.6%).

Table 1
Participant Demographics, Frequencies, and Percentages

	(N=136)	Percentage	Average
Gender			
Female	58	42.6	
Male	78	57.4	
Non-binary	--		
None of the above, please specify	--		

Not reported	--		
Age (in years)			
20 to 29	18	13.2	
30 to 39	44	32.4	
40 to 49	26	19.1	
50 to 59	18	13.2	
60 to 69	14	10.3	
70 and older	6	4.4	
Not reported	10	7.4	
Average Age			43
Length of Time Working at Current Firm (in years)			
0 to 5 years	56	41.2	
6 to 10 years	29	21.3	
11 to 15 years	18	13.2	
16 to 20 years	12	8.8	
21 to 25 years	8	5.9	
More than 25 years	13	9.6	
Average			11

RESULTS

Table 2 presents the multiple regression results. The prediction model for the model is statistically significant, $F(4,130) = 31.271$, $p < .001$, and accounted for approximately 49% of the variance of turnover intention ($R^2 = .490$, adjusted $R^2 = .475$). Job embeddedness was statistically significant ($p < .001$) and supported the proposed hypothesis of job embeddedness being related to turnover intentions. The control variable, job commitment, was also statistically significant (p=.016), while the other two control variables, job satisfaction and job alternatives, were not.

Table 2
Regression Analysis

Variable	β	t-statistic	p-value
Constant	.525	.737	.463
Control Variables			
Commitment	.302	2.452**	.016
Job Satisfaction	.133	1.199	.233

Job Alternatives	-.067	-1.483	.141
Test Variable			
Job Embeddedness	.594	4.467***	<.001
R-squared	.490		
Adjusted R-square	.475		

DISCUSSION

This study examined the relationship between job embeddedness and turnover intentions of full-time accounting professionals of public accounting firms. The results from the multiple regression analysis present evidence that job embeddedness does predict turnover intentions. The findings are consistent with prior research and add support to the literature on turnover intentions and job embeddedness by providing evidence that job embeddedness is a predictor of turnover intentions (Coetzer et al., 2017, Coetzer et al., 2019; Cunningham et al., 2005; Mitchell et al., 2001; Takawara et al., 2014). Specifically, the results indicate that the higher employees' level of job embeddedness is, the more likely employees will stay with their current firm.

PRACTICAL AND THEORETICAL IMPLICATIONS

Based on these findings, public accounting firm management looking to improve retention in their firms should implement strategies to increase their employees' embeddedness in the organization and the community by focusing, with intention, on the six dimensions of job embeddedness: organization fit, links, sacrifice and community fit, links, sacrifice. Firm management should focus on strategies that strengthen employees' relationships with both colleagues and clients. Managers and partners should find ways to be a conduit for their employees who want to get more invested in the community. Additionally, they should continually check in with their employees to see if they still feel a fit with the firm and the community. Understanding that their employees are more inclined to stay at their firm when they experience higher levels of job embeddedness is a key insight for an alternate strategy to retain employees.

This study contributes to the research on job embeddedness and turnover intentions in two ways. One, this study was the first to examine job embeddedness and turnover intentions within the context of public accounting. This study answers the specific all by Nouri and Parker (2020) by investigating job embeddedness and turnover intentions of full-time accounting professionals at public accounting firms and extends the stream of turnover intentions research by examining additional antecedents: job embeddedness. Two, prior research on turnover intentions in public accounting has primarily been within the context of accountants at large public accounting firms (Herda & Lavelle, 2012; Parker & Kohlmeyer, 2005; Pasewark & Strawser, 1996; Pasewark & Viator, 2006; Stallworth, 2003). Other studies focused within a geographic area (Parker & Kohlmeyer, 2005) while others used the AICPA's member list to mine for survey participants (Pasewark & Viator, 2006; Stallworth, 2003). The participants in this study were from public accounting firms of all sizes across the U.S.

LIMITATATIONS AND FUTURE RESEARCH

As with any study, this study has limitations. The sample size was small. The number of participants did not allow for the use of structural equation modeling analysis. A larger sample size would allow for the use of structural equation modeling analysis to be used to test the model and provide a more comprehensive model of full-time accounting professionals' intentions to stay with their firm to be developed.

The findings of this study point to several areas of future research. The survey was distributed using different channels, and the distribution strategy focused on obtaining participation from firms of all sizes and from all service lines. Analyzing job embeddedness and turnover intentions by service line should be done as each service line has different types of projects, deadlines, and difficulties. The study did not ask the participants where they lived or if they lived in suburban or rural areas. Thus, there was no information to identify the possible impacts of location on the variables of interest. Investigating whether job embeddedness differs in suburban or rural areas would give additional depth to these constructs. Additionally, this study focused on turnover intentions in public accounting. Retention is also an issue for accountants practicing in the industry. This study could be replicated with a focus on accountants in the industry and how their embeddedness could influence their desire to stay with their company.

CONCLUSION

The findings of this study add to the current literature and the practical implications of job embeddedness on turnover intentions in public accounting firms. Theoretically, the results are the first to provide evidence that the levels of job embeddedness for employees in public accounting firms predict their desire to stay with their firm. Practically, this provides public accounting firm management better guidance on the intentionality of their human resource management practices. With this knowledge, they can create/change/adjust their human resource management practices to strengthen their employees' links, fit, and sacrifice their firm and their community.

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Journal of Business and Accounting
Vol 16, No. 1; Fall 2023

THE ETHICS OF LOVE: TOM LOVE AND THE LEGACY OF LOVE'S TRAVEL STOPS

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ABSTRACT

This research provides information related to ethical behavior as it applies to businesses. Tom Love, founder and owner of Love's Travel Stops, lived by the principles of integrity, honesty, and faith. As a tangible result, he left a legacy of great ethical practices. The purpose of this research is to share the ethical philosophies that embody Tom Love's legacy. His family history is included because it was an integral part of his practices and the Love's Travel Stops chain is still a "family business".

Keywords: Ethics, Ethical Behavior, Employee Satisfaction, Customer Satisfaction, Legacy

INTRODUCTION

When Tom Love passed away in March 2023, he left a legacy of great business practices and ethical principles that can educate many people. His Love's Travel Stops are easy to spot on the highways with the big heart logo. Employees love their jobs at the many stores and the customers appreciate the excellent prices, friendly faces, clean restrooms, showers, laundry areas, and even dog parks for their pets. This research will integrate ethical principles with Tom Love's life as well as his career highlights. It will also include other people's recognition of his "Legacy of Love".

LITERATURE REVIEW

Entrepreneurs spur innovation and help drive economic growth. However, turning a dream into a reality and that reality into a thriving business requires a wide range of characteristics, skills, and experience. Successful entrepreneurs often have the following traits: Self-Starter, Resilience, Creativity and Problem-Solving, Relationship Building, and Tenacity (Prossack, 2021). Tom Love, founder of Love's Travel Stops, had all these traits and more: Traits that facilitated his success in business.

Ethical leaders personify honesty, integrity, fairness, understanding, and respect for others (Peck, 2023). One of Tom's most admiring qualities which helped him succeed in business is that he was an ethical leader. Many have said that he never wavered from the principles of honesty, integrity, and faith. In fact, the March 7, 2023, headline in *The Oklahoman* announcing his death at the age of 85, included "A Life Filled with Integrity, Honesty, and Faith" (Lackmeyer, 2023). A reputation for portraying these positive ethical traits helps build both employee and customer loyalty, paving the way for success (Peck, 2023).

Another important quality that Tom Love had, and not only in his name, is the ability to love: agape love, or caring for others, to be exact. This form of love is what the apostle Paul refers to in 1 Corinthians 13:13 which states ". . . three remain: faith, hope, and love. But the greatest of these is love" (Bible Gateway, 2023). Tom Love had faith, hope, and love. Agape love, at the individual level, contains qualities such as kindness, patience, truthfulness, and generosity (Lee, 2022). Hummels et al. (2021) assert agape love, also termed beneficial love, should be front and center in the values, ethics, and behavior of any business. In his book, "Love is Just Damn Good Business," Steve Farber states that love is a critical component within an organization's framework (Caprino, 2019). Mr. Farber further contends that love is what motivates and drives employee retention, customer loyalty, and long-term business success (Caprino, 2019).

HIGHLIGHTS OF TOM LOVE'S PERSONAL LIFE

Tom Love was born on October 10,1937 in Oklahoma City, OK and was one of six children. Mr. Love was the descendant of two Chickasaw families named Love and both families were forced to migrate via the historic Trail of Tears. His father was an attorney and President of Kerr-McGee oil company and Tom was a descendant of Benjamin Love, the official interpreter for the Chickasaw people.

Tom Love attended St. John's University in St. Cloud, MN, but dropped out after less than one semester. He joined the Marines and rose to the rank of corporal in his three-year stint. He married Judy and tried college again at the University of Oklahoma but dropped out in 1964. Tom Love passed away on March 7, 2023, at the age of 85 after becoming a billionaire by founding Love's Travel Stops & Country Stores. Tom was survived by Judy, their four children, nine grandchildren, two great-grandchildren and two more on the way (Lackmeyer, 2023; Pendleton and Albright, 2023; San, Juan, 2023).

HIGHLIGHTS OF TOM LOVE'S CAREER

Tom and Judy Love opened the first Love's Travel Stop when they leased a self-service gas station in Watonga, OK in 1964 and then continued to open another 40 stores in the next eight years. In 1971, they merged gas stations with convenience stores and that resulted in business growth. The first travel stop opened in Amarillo, Texas in 1981 on the historic Route 66. This new type of business catered to professional truck drivers and cross-country travelers who needed fuel, showers, food, and perhaps even truck/car maintenance. In 2022, Love's Travel Stops & Country Stores had more than 600 locations in 42 states and Tom Love was on the Forbes 400 Net Worth list with a valuation of $5.5 billion (Lackmeyer, 2023).

Much of Love's career philanthropy was done with the help of his wife, the "love" of his life. Judy Love is President of the Tom and Judy Love Foundation and sits on the boards of Oklahoma City University, SSM Health Care, the St. Anthony Foundation, Oklahoma City Museum of Art, Civic Center Music Hall, Allied Ats, Community Foundation, and the University of Central Oklahoma Foundation (Hinton, 2023).

MAN OF CONVICTION: ETHICAL LESSONS TO LEARN FROM TOM LOVE

(SOURCE: WWW.LOVES.COM/EN/NEWS/2023/MARCH/TOM-LOVE-FOUNDER-AND-EXECUTIVE-CHAIR-OF-LOVES-TRAVEL-STOPS-PASSES-AWAY-AT-85)

Love was in Tom's name and his basic philosophy of life, as well as in his business dealings. He was humble and believed in serving others and putting people first.

Tom Love never wavered from the principles of honesty and integrity and faith. He listened carefully and was interested in the success of everyone including customers, employees, and his family and friends.

His creativity and innovation created a multi-billion business. In 1972, Tom's country store in Guymon, OK became the first store in the nation to combine self-service gasoline and grocery items, which was something completely new at the time. His continuous hard work, ethical business practices, and essentially "Leadership Based on Love" created a legacy for Tom Love.

WHAT OTHERS SAY ABOUT TOM LOVE

(SOURCE: WWW.LOVES.COM/EN/NEWS/2023/MARCH/TOM-LOVE-FOUNDER-AND-EXECUTIVE-CHAIR-OF-LOVES-TRAVEL-STOPS-PASSES-AWAY-AT-85)

Tom Love worked and lived in Oklahoma where he made many friends throughout his business and personal life. These friends recognized his honesty, diligence, creativity, and love.

Following are statements made about him that reflect his amazing legacy:

Former OK Governor Frank Keating: "Tom was a quintessential entrepreneur long before entrepreneurialism was ever in vogue. He loved his country, having served in the Marine Corps. He loved his hometown of Oklahoma City, where he headquartered his business. Tom loved his state and responded with alacrity and superb skill when he accepted my appointment as chairman of the Oklahoma Transportation Commission. He was devoted to his dear wife, Judy, their four wonderful children, and many grand and great-grandchildren. He was committed to his faith, and he gave generously, but often quietly, to support education, medical and other significant initiatives."

Jane Jayroe-Gamble: "Tom Love is my Oklahoma hero. Together with his loving wife and business partner, Judy, Tom has lived a life of humility, generosity, and enormous impact. His deep love for his church, community and country has been abundant and long-lasting. As our grieving hearts accept Tom's passing, the brokenness is quickly filled with gratitude for his life. Tom was a man of amazing vision, deep faith, and complete devotion to others. He loved God. And he loved people – all kinds of people. None more than his family. May the comfort of our compassionate God be present with his beloved wife, Judy, their children, and grandchildren. And all of us. A mighty oak has fallen in the forest and left a gaping hole against the sky. But Tom Love's roots grew so deep that greatness will continue to grow from the many seeds of faith and integrity he planted in others."

Former Attorney General for the State of Oklahoma, Mike Turpin: "We mourn the passing of our great friend and fellow Oklahoman, Tom Love. Tom represented the finest of our Oklahoma values of humility, honesty, compassion, and service. He exhibited these exceptional core values in every aspect of his remarkable life – faith, family, friends, business, and community. As a husband, father, grandfather, great-grandfather, and friend, Tom always showed an abundance of goodness and kindness. We salute Tom for a well-lived life and for his invaluable contributions to the betterment of our city, state, and nation. Those who had the pleasure of knowing and working with Tom are better because of it."

WHAT CUSTOMERS AND EMPLOYEES LOVE ABOUT TOM LOVE AND LOVE TRAVEL STOPS

(SOURCE: BRINGFIDO.COM/BLOG/LOVES-TRAVEL-STOPS-ADD-DOG-PARKS/)

Tom Love was a person who cared about his customers. On National Dog Day, 2019, Love's Travel Stops & Country Stores announced the construction of 90 new dog parks in various locations. Customers ranging from professional drivers to families traveling on vacation can benefit from this extra accommodation as it gives everyone a safe place to stretch their legs and go to the restrooms. All the fenced in areas have double air-locked gates for pet safety.

Professional drivers can also safely spend the night in their parking lots as they have an abundance of 18-wheeler parking spaces for their convenience. They have a reputation for "Highway Hospitality" and customers may even have to call them for roadside assistance on occasion as well as get their equipment serviced at their 24-hour truck service centers. The drivers also benefit from fresh food offerings with Subways being the most common food service provided at their stops. Love's Travel Stops in 2023 has almost 650 locations across 42 states (Boyle, 2023).

There are more than 40,000 employees working for the company, and the company motto is "Clean Places, Friendly Faces". In 2023, Love's was rated the No. 1 company for employee wellbeing according to an Indeed.com report as part of the website's inaugural Better Work awards. The ratings were based on four aspects of employees' well-being: happiness, purpose, satisfaction, and stress. The company's culture values work-life balance and one employee quote is as follows: "This family really cares about each and every one of the team members, whether they're a cashier, a sandwich artist, a general manager, or an executive vice president". Employees include drivers for their truck fleet and logistics firm, mechanics, and the traditional employees in their stores. Flexible work schedules and a friendly atmosphere are primary reasons for their high ratings. Also, the company created a diesel technician program that taught 300 employees to service the heavy-duty truck systems (Boyle, 2023).

Jenny Love Meyer is the Chief Culture Officer at Love's, and she credits her father, Tom Love, with their ethical values. She said, "We didn't go into a board room and invent our values, they came from how my dad behaved and the example that he showed. Respecting others and what others say is what people remember him for" (Liu, 2023).

ETHICAL LESSONS LEARNED FROM TOM LOVE'S LEGACY

Some of the ethical lessons to be learned from Tom Love's legacy are as follows:

- Leadership based on Love – Tom Love's ethical philosophy and even his name! His theme in both business and his personal life was simply "Love".
- Vision, Entrepreneurship, and Innovation – He was constantly making the world a better place in business with these three important traits.
- Humbleness and serving others – His faith perhaps created this important type of servant-leadership style.
- Honesty with all people and a "people first" mentality – While some people use this approach with certain people, Tom Love used it with everyone.
- "Clean Places, Friendly Faces" – Hospitality and treating travelers well is even a theme in the Bible and very important with travel stops!
- Faith, Family, and Friends mentality – Tom Love had his priorities in order with his mentality and lived it daily.
- Listening and trying to understand others – He knew that others may have good ideas and sought first to understand others as he worked and served them.
- Planting seeds with the Tom and Judy Love Foundation (which mainly funds grantmaking for education and youth) and other acts of generosity – Legacies built in this manner will last much more than his lifetime.
- Education - Love's is sponsoring the new Oklahoma University (OU) softball stadium and Tom's legacy will live on in at least four Oklahoma universities as well as in his family, employees, and customers!

CONCLUDING REMARKS

This research describes Tom Love's life and legacy as it relates to business ethics. Tom Love started Love's Travel Stops in 1964 with a single location and grew the business to almost 650 locations by 2023. He lived by the principles of integrity, honesty and faith and built the business on practicing ethical behavior.

Tom respected all people whether they were family, employees, or customers. He put people first, earning high ratings from employees for flexible schedules and a friendly atmosphere. He gave immeasurably to the community and to many organizations across the country. He and his wife formed the Tom and Judy Love Foundation which funds grantmaking primarily for education and youth.

As a tangible result of the rewards that can be achieved by practicing ethical behavior, Tom and Judy's first Love's location grew to stores totaling an estimated annual revenue of $20 billion. The continuing success of Love's Travel Stops and the many charitable endeavors of the Love family are a testament to Tom Love's legacy of great ethical practices.

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Journal of Business and Accounting
Vol 16, No. 1; Fall 2023

TAX AVOIDANCE AS A SOURCE OF FINANCING: USAGE OF PERMANENT VERSUS TEMPORARY CASH TAX SAVINGS

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ABSTRACT

The purpose of this paper is to analyze tax avoidance as a source of financing. While tax avoidance has been investigated, we extend prior analyses to investigate whether the components of total cash tax savings – permanent and temporary cash tax savings – are used differently. We find that temporary tax savings are used for investment to a greater extent than permanent tax savings and that investment levels are partially sticky after temporary savings reverse. We perform a range of cross-sectional analyses based on characteristics of the firm and the firm’s operating environment. In all cross-sectional analyses, we find that temporary tax savings are used for real investment to a greater extent than permanent tax savings. Finally, we find that cross-sectional heterogeneity in the usage of tax savings is primarily driven by heterogeneity in the usage of temporary tax savings.

Keywords: Tax Avoidance; Cash Holdings; Financial Constraints; Multinational Corporations

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INTRODUCTION

In this paper, we investigate how firms use cash tax savings generated from permanent and temporary tax avoidance. We seek to provide policymakers with additional insight into the effects of tax policy.

Tax avoidance can be seen as a transfer of resources from the government to the firm. Tax avoidance generates cash tax savings, which the firm could put towards new investment, hold as cash, or distribute to debt and equity holders. For a firm at full investment, these additional funds may be superfluous. But for underinvesting firms (e.g., due to financing constraints), the extra resources provided by tax avoidance can enable full investment. The social welfare impact of this resource transfer is ambiguous. Diverting public funds to prevent private underinvestment is arguably beneficial for the economy. However, transferring public funds so that they may be distributed as a dividend to the firm's shareholders would be viewed as a less favorable use of those funds.

On at least one occasion, policymakers attempted to explicitly restrict the usage of cash tax savings towards socially beneficial usage. The American Jobs Creation Act of 2004 (AJCA) allowed firms to repatriate foreign earnings at a significantly reduced tax rate, with the stipulation that the tax savings be spent on hiring, investment, and research. Paying down debt with cash tax savings is permitted so long as the intent is to stabilize the corporation. Among the items explicitly disallowed include executive compensation and distributions to equityholders. Unfortunately for policymakers, the fungible nature of cash rendered these constraints non-binding. The academic literature finds that corporations ostensibly used their tax savings on permitted uses, while they used the "freed up" funds to pay down debt and distribute to shareholders (Blouin and Krull, 2009; Graham et al., 2010).

In this paper, we examine how firms spend cash tax savings from all forms of tax avoidance – not just the repatriation tax holiday discussed above. Most tax avoidance opportunities do not have explicit requirements for how the funds must be spent. However, policymakers have stated which uses they consider to be in the public's interest. By applying these standards to other forms of tax avoidance, we seek to provide policymakers with evidence on how firms spend tax savings in the absence of explicit restrictions. Although the repatriation tax holiday savings were paid out to creditors and equityholders (undesirable uses of cash), this result may be attributable to the windfall nature of the one-year repatriation tax holiday. Recurring, normal tax avoidance may not be spent in the same manner. It is likely difficult for a firm to use a large windfall of cash in a productive manner (such as the repatriation tax holiday), but the annual tax savings generated by recurring tax avoidance strategies could be incorporated into the firm's overall financing strategy.

In a similar study, Guenther, Njoroge, and Williams (2020) examine how firms spend their tax-related cash relative to other after-tax cash flows. The measure used by Guenther et al. (2020) – tax-related cash – includes both permanent and temporary tax savings. We extend their work by analyzing permanent and temporary tax savings separately. This distinction is relevant for policymakers, who must assign tax incentives to be either permanent or temporary. Temporary tax avoidance incentives are significantly cheaper for policymakers to implement – the government defers receipt of tax without forgoing it completely. If policymakers' objectives can be achieved via either permanent or temporary tax avoidance incentives, the latter would be preferable.

Guenther et al. (2020) find that firms are less likely to invest with tax-related cash relative to other after-tax cash flows. They attribute this result to the uncertainty surrounding potential repayment of those tax savings – e.g., the chance that the taxing authorities will successfully challenge the tax position. Guenther et al. (2020) note that not all tax avoidance is uncertain. We predict that temporary tax avoidance is, on average, subject to less repayment uncertainty than permanent tax avoidance and will therefore be invested at a greater rate than permanent tax avoidance. Temporary tax avoidance must be repaid with certainty and the timing of repayment is determined by factors known to management and, to some degree, controlled by management. For example, all future depreciation deductions are known with certainty from the initial purchase of an asset. Cash to accrual basis adjustments, another temporary book-tax difference, are determined by the timing of accruals and related payments.

Using an empirical methodology modified from Chang et al. (2014), we estimate how firms allocate their cash flows from operations among the following uses: investing, holding as cash, paying down debt, or distributing to equityholders. We separately estimate the portions of the firm's operating cash flows attributable to temporary tax avoidance and permanent tax avoidance. This provides inferences as to whether firms spend temporary cash tax savings differently from permanent cash tax savings. Coefficient estimates can be interpreted as the proportion of a dollar of tax savings being allocated to the various possible uses.

Our results are as follows. Pooled tests show that temporary tax savings are used for real investment at a greater rate than permanent tax savings (30 cents per dollar and 11 cents per dollar, respectively). Neither permanent nor temporary savings are distributed to equityholders, but permanent tax savings are used to repay debt. Temporary tax savings are also less likely to be held as cash. Overall, the results are consistent with temporary tax savings being more likely to be invested and less likely to be distributed than permanent tax savings.

Blouin and Krull (2009) cite one reason for the failure of repatriation tax holiday funds to be invested is that repatriating firms are likely to be those with few investment opportunities. We expect that firms with capital constraints will be the most likely to use tax savings on investment, as they have unused investment opportunities immediately available. As temporary tax savings appear to be preferred for real investment, we expect to see most of the effect in how temporary tax savings are used.

To test the effect of firm-level financial constraints on the amount of tax savings spent on investment, we create cross-sectional subsamples according to financial constraint. Firms with external financing constraints rely on external financing to fund new investment and face costly or unavailable external financing options. These firms are likely underinvested. Firms that are fully financed by internally-generated funds are the opposite end of this spectrum, as they can finance new investment solely through operating cash flows – considered the cheapest and highest priority source of financing (Myers and Majluf, 1984). We find that internally financed firms primarily save both permanent and temporary tax savings as cash holdings, and that financially constrained firms similarly save most of their permanent tax savings. However, financially constrained firms differ in their usage of temporary tax savings, investing them in real assets to a greater extent than saving as cash holdings.

Prior to the Tax Cuts and Jobs Act of 2017, US multinational firms could avoid US taxation on their foreign earnings by keeping those earnings overseas (not repatriating). The tax savings generated by keeping foreign earnings overseas are thus restricted to investment in the foreign country of origin. To test whether domestic and multinational firms spend permanent and temporary tax savings differently, we separate the sample between USA domestic firms and multinational firms and re-perform our main analysis on each subsample. Consistent with multinational tax savings facing additional frictions, we find that domestic firms invest more of their tax savings than multinational firms do. However, both domestic and multinational firms invest a larger portion of temporary tax savings into real assets, relative to permanent tax savings.

Finally, we examine the effect of temporary tax reversals on investment. Although temporary tax savings appear to be the preferred source of investment financing (relative to permanent tax savings), the fact that temporary tax savings must be repaid in future periods raises the concern that any increases to investment caused by temporary tax savings will be transitory. We create a new sample limited to firms with negative tax savings: tax payments in excess of the statutory rate. We find that increases to investment are partially sticky. While firms do decrease capital expenditures to fund tax repayments, this decrease in capital expenditures is less than the initial increase. The remainder is financed through debt and equity issuances.

Our research contributes to the academic literature on tax avoidance by demonstrating that firms use cash generated by temporary tax savings and permanent tax savings differently. We also find that firms vary in their usage of permanent and temporary cash tax savings in different circumstances. Observed changes to the amount of tax savings (e.g., firms increasing their tax avoidance in response to financial constraints) may only capture part of the firm's strategic response to varying circumstances.

Our research also contributes to tax policy discussions. We provide evidence about how firms use tax savings, in various cross-sections; such evidence is useful to policymakers when designing tax incentives. Our research shows that investment of tax savings depends on the type of tax saving (permanent or temporary) in addition to various characteristics of the firm and the firm’s operating environment. If policymakers want tax savings to be spent on new investment, then they could design tax avoidance incentive policies according to which firms are most likely to invest the tax savings.

The results of this study are also of interest to the general public. Corporate tax avoidance activities have faced increased scrutiny recently, as media outlets express concerns that corporations are not paying their "fair share" towards society. Our research does not address the normative question of whether firms ought to pay more taxes. However, concerns about the social welfare impact of tax avoidance are tempered by our findings that temporary tax savings are used to finance investment.

The remainder of the paper is organized as follows. Section 2 discusses prior literature in this area and details our hypothesis development. Section 3 discusses the data selection and empirical methods used in our analyses. Section 4 present results of our main analyses. In Section 5, we perform supplemental tests with the negative tax savings sample to determine how temporary tax reversals are funded. Section 6 concludes.

PRIOR LITERATURE AND HYPOTHESIS DEVELOPMENT

Prior Literature

According to the pecking order theory of corporate finance, firms first seek financing from sources with the lowest cost of capital. Myers and Majluf (1984) model a scenario where a firm must raise capital for a positive NPV project in a setting with information asymmetry between management and firm outsiders. Due to information asymmetry, the market assumes that an equity issuance indicates management believes the firm is overvalued. Debt issuances carry default risk, and thus are subject to negative effects of information asymmetry as well. But if the probability of default is low, then the negative information effects should be smaller for debt than equity. Myers and Majluf note that there is an easy way to avoid loss of market value related to information asymmetry: internally generated funds. This gives rise to the "pecking order": firms first prefer to finance projects with internally-generated funds, but will turn to debt (and then equity) if unavailable.

Tax avoidance, defined as a reduction in taxes paid, is a form of internally-generated financing. Firms have two options available to reduce tax payments. Permanent tax avoidance arises from items that are included in book income, but will never be included in taxable income (or vice versa). Temporary tax avoidance arises from timing differences in the recognition of items for book purposes and tax purposes. Both permanent and temporary tax avoidance are sources of internally-generated financing, suggesting that they are among the highest priority sources of funds.

Prior literature has examined the relevance of cash savings from tax avoidance. Edwards et al. (2016) find that financially constrained firms increase their tax avoidance to generate internal cash flows, and that this increase is used on investment and working capital. They estimate that 20% to 95% of this increase is attributable to temporary tax avoidance. They attribute this result to prior evidence suggesting that firms have not utilized all of their temporary tax avoidance opportunities. Managers do not regularly pursue temporary tax avoidance as it provides no financial reporting benefit; hence, temporary avoidance opportunities are still available if the firm faces financial constraints, whereas permanent avoidance opportunities have already been exhausted.

Our study has two main differences from Edwards et al. (2016). First, Edwards et al. focus on constrained firms, and whether they turn to tax savings to generate additional cash. We include firms that aren't necessarily motivated to generate cash, but still generate tax avoidance (e.g., tax avoidance that is non-discretionary or motivated by financial reporting concerns). Edwards et al. find that constrained firms primarily use temporary savings when they need additional cash financing. This finding does not preclude permanent tax savings from being a useful source of regular cash financing. In the Edwards et al. setting, permanent tax avoidance is not available for incremental financing needs. Second, Edwards et al. examine the magnitude of firms' tax avoidance activities, and whether they increase their avoidance in response to a need for cash. We examine how firms allocate cash from tax avoidance, and whether they change their usage in response to various needs.

Hypothesis Development

Guenther et al. (2020) find that firms invest less (and save more) tax-related cash relative to other after-tax cash flows. The authors attribute this result to uncertainty regarding potential repayment of tax-related cash (e.g., from a successful challenge by the taxing authorities). If a firm invests its tax savings, and those savings eventually need to be repaid, that firm may face additional costs generating funds to settle the tax liability (such as liquidating investments or borrowing). The firm's other cash flows are not subject to risk of repayment to taxing authorities. Therefore, the authors assume that tax-related cash is subject to more uncertainty regarding the costly repayment risk than the firm's other cash flows.

Are permanent tax savings subject to the same repayment uncertainty as temporary tax savings? Guenther et al. (2020) assume that tax savings are, *on average*, subject to greater uncertainty than the firm's other cash flows. However, they note that not all tax avoidance is uncertain – writing that "for example, there is little uncertainty in the use of accelerated depreciation" (Guenther et al., 2020, p.9). Indeed, depreciation schedules plan out with certainty the associated depreciation deductions on fixed assets. Repayment of other temporary tax savings, such as cash-basis adjustments, depends on the timing of accruals and cash payments. Because permanent tax savings must be repaid contingent on the actions of a third party (the taxing authorities), we expect that temporary tax savings will be subject to less uncertainty than permanent tax savings and make the following prediction:

H1: On average, firms use temporary tax avoidance to finance real investment to a greater extent than permanent tax avoidance.

There are a couple reasons why we might not expect to find this hypothesized relation. First, it may be that repayment – even in the absence of *uncertainty* regarding repayment – can preclude tax savings from being used on investment. If temporary tax savings are to be used to finance investment, the repayment date must occur after the investment has generated enough cash flows to cover the additional taxes. Otherwise, the firm will still face the costly problem of obtaining funds to cover the tax payment (e.g., via borrowing or liquidating the investment).

The second reason that we may not expect to find the relation hypothesized in H1 is that temporary tax savings may be subject to more repayment uncertainty than permanent tax savings. While we assume that the normal repayment of temporary tax savings is less uncertain than the possibility of a successful challenge requiring repayment of permanent tax savings, it is possible that the taxing authorities could also challenge temporary tax savings. We are not aware of any studies providing evidence as to whether temporary tax savings are subject to the same risk of challenge by taxing authorities as permanent tax savings.

DATA, SAMPLE SELECTION, AND EMPIRICAL DESIGN

Our sample includes US public firms listed on the Compustat database over the years 1988-2016. We choose 1988 as the beginning of our sample as the Tax Reform Act of 1986 significantly changed US corporate taxation. Our sample excludes financial institutions, as (1) their capital structure is subject to regulation and (2) investment in securities is a core part of their operations. We exclude utilities as they are heavily regulated. We further restrict the sample to include only firm-year observations with a Cash ETR less than the statutory rate (e.g., firms who have positive total tax savings). We require sample firms to have positive pretax income so that tax avoidance activities will change taxes paid at the margin, rather than changing the amount of net operating loss.

We estimate how firms spend cash by following a cash flow statement approach originally used in Chang et al. (2014) as modified by Guenther et al. (2020). Consider the cash flow statement identity:

$$\Delta Cash = CFO + CFI + CFF \tag{1}$$

A firm's change in cash is equal to the sum of the net cash flows provided or used by operating activities (CFO), investing activities (CFI), and financing activities (CFF). Taxes paid are removed from the firm's CFO, hence, tax savings are increases to CFO. To estimate how firms allocate tax savings, and other operating cash flows, we rearrange equation (1) so that CFO is on the left-hand-side:

$$CFO = \Delta Cash - CFI - CFF \tag{2}$$

Next, we disaggregate CFF into debt financing activities and equity financing activities (CFFD and CCFE, respectively). we also multiply the subtracted variables by negative one so that the equation may be represented with addition:

$$CFO = CFI + \Delta Cash + CFFD + CFFE \tag{3}$$

This specification can be interpreted as equating the sources of cash with the uses of cash. A positive amount on the left-hand side (CFO) indicates a cash *inflow*. A positive amount on the right-hand side indicates a cash *outflow* (e.g., positive CFFD indicates cash was used to reduce debt).

Following Chang et al. (2014), we model a system of equations to regress the different uses of cash on operating cash flow and a set of control variables:

$$CFI = \beta^{CFI} CFO + \gamma^{CFI} Controls + \varepsilon^{CFI} \tag{4}$$

$$\Delta Cash = \beta^{\Delta Cash} CFO + \gamma^{\Delta Cash} Controls + \varepsilon^{\Delta Cash} \tag{5}$$

$$CFFD = \beta^{CFFD} CFO + \gamma^{CFFD} Controls + \varepsilon^{CFFD} \tag{6}$$

$$CFFE = \beta^{CFFE} CFO + \gamma^{CFFE} Controls + \varepsilon^{CFFE} \tag{7}$$

Due to the identity in equation (3), the sum of β in (4)-(7) will equal one, allowing these estimates to be interpreted as allocations of a single dollar of CFO across four possible uses. The sum of γ will equal zero – control variables do not provide cash inflows but can influence how cash inflows are allocated. we include the control variables from Chang et al. (2014) as well as the additional tax controls from Guenther et al. (2020). All control variables are lagged; variable definitions are available in Appendix 1. The market-to-book ratio and sales growth are included as controls for growth opportunities. Following Guenther et al. (2020), we include PP&E as a control to address the possibility of reverse causality in investment. we control for firm size using the natural log of inflation-adjusted total assets. The ratio of debt-to-assets is included as a control for leverage. Lastly, we include the firm's NOL carryforward and pretax income.

To separately estimate the usage of permanent and temporary savings relative to the firm's other operating cash flows, we disaggregate *CFO* into the following components:

$$CFO = CFb4taxsave + permtaxsave + temptaxsave \tag{8}$$

where *temptaxsave* is the firm's temporary tax avoidance, *permtaxsave* is the firm's permanent tax avoidance, and *CFb4taxsave* is the firm's CFO exclusive of all tax avoidance. *temptaxsave* is defined as the firm's deferred tax expense. *permtaxsave* is equal to pretax income times the US statutory rate of 35% less taxes paid and deferred tax expense. *CFb4taxsave* is defined as the residual operating cash flows (CFO less the two tax savings variables *temptaxsave* and *permtaxsave*).

Finally, we disaggregate the uses of cash flows as follows: *CFI* is separated into real investment (aka capital expenditures), investment in securities, and acquisitions; *CFFD* is separated into debt issuances and debt repayments; and *CFFE* is separated into stock issuances and stock repurchases. After disaggregating the uses of cash, we have the following system of equations:

$$invst\_real = \beta^{invst\_real}CFb4taxsave + \delta^{invst\_real}permtaxsave + \omega^{invst\_real}temptaxsave + \gamma^{invst\_real}Controls + \varepsilon^{invst\_real} \quad (9)$$

$$invst\_sec = \beta^{invst\_sec}CFb4taxsave + \delta^{invst\_sec}permtaxsave + \omega^{invst\_sec}temptaxsave + \gamma^{invst\_sec}Controls + \varepsilon^{invst\_sec} \quad (10)$$

$$invst\_other = \beta^{invst\_other}CFb4taxsave + \delta^{invst\_other}permtaxsave + \omega^{invst\_other}temptaxsave + \gamma^{invst\_other}Controls + \varepsilon^{invst\_other} \quad (11)$$

$$\Delta Cash = \beta^{\Delta Cash}CFb4taxsave + \delta^{\Delta Cash}permtaxsave + \omega^{\Delta Cash}temptaxsave + \gamma^{\Delta Cash}Controls + \varepsilon^{\Delta Cash} \quad (12)$$

$$debt\_issue = \beta^{debt\_issue}CFb4taxsave + \delta^{debt\_issue}permtaxsave + \omega^{debt\_issue}temptaxsave + \gamma^{debt\_issue}Controls + \varepsilon^{debt\_issue} \quad (13)$$

$$debt\_repayment = \beta^{debt\_repayment}CFb4taxsave + \delta^{debt\_repayment}permtaxsave + \omega^{debt\_repayment}temptaxsave + \gamma^{debt\_repayment}Controls + \varepsilon^{debt\_repayment} \quad (14)$$

$$stock\_issue = \beta^{stock\_issue}CFb4taxsave + \delta^{stock\_issue}permtaxsave + \omega^{stock\_issue}temptaxsave + \gamma^{stock\_issue}Controls + \varepsilon^{stock\_issue} \quad (15)$$

$$stock\_repurchase = \beta^{stock\_repurchase}CFb4taxsave + \delta^{stock\_repurchase}permtaxsave + \omega^{stock\_repurchase}temptaxsave + \gamma^{stock\_repurchase}Controls + \varepsilon^{stock\_repurchase} \quad (16)$$

We jointly estimate equations (9) – (16) using Seemingly Unrelated Regression (SUR). We use Wald chi-squared tests to evaluate equality of coefficients within and across models.

Hypothesis 1 predicts that firms use temporary tax savings to finance new investment to a greater extent than permanent tax savings. Looking at investment, evidence consistent with H1 would be $\delta^{invst\_real} < \omega^{invst\_real}$. This result indicates that firms spend a greater proportion of their temporary tax savings on new investment than firms spend permanent tax savings on investment. Looking at cash holdings, we consider $\delta^{\Delta Cash} > \omega^{\Delta Cash}$ to be evidence consistent with H1.

ANALYSES

Permanent vs Temporary Tax Savings

Table 1 reports results of estimated equations (9) – (16) on the full sample. Recall that coefficient estimates on *CFb4taxsave, permtaxsave,* and *temptaxsave* can be interpreted as one dollar of inflow being allocated to the various cash outflow uses – investment, cash holdings, paying down debt, or distributing to equityholders. P-values at the bottom of Table 1 are the results of Wald chi-squared tests of equality between the coefficient estimates.

Results from this estimation provide evidence consistent with H1. Temporary tax savings are used on capital expenditures to a larger extent (30 cents on the dollar) than permanent tax savings (11 cents), with the difference significant at the 1% level. Temporary tax savings are also held as cash to a lesser extent than permanent tax savings (56 cents versus 64 cents, significant at the 1% level).

The results in Table 1 suggest that policymakers interested in providing firms with investing capital via tax breaks should consider instituting temporary tax avoidance incentives, rather than permanent tax avoidance incentives. Temporary tax savings are used to a greater extent on investing than permanent tax savings. Additionally, temporary tax savings are much less costly to the government – tax revenues are only deferred, not forfeited entirely.

There are a couple points to note with regards to inferences from the tests performed in this section. The first is that the results of this manuscript do not imply that firms avoid taxes with the intent of generating cash to use for financing real investment. Firms may avoid tax for financial reporting reasons (Dhaliwal et al., 2004) or to generate cash (Edwards et al., 2006; Campbell, Goldman, and Li, 2021), and some tax avoidance is non-discretionary (e.g., accrual to cash adjustments). The results of our analyses show how managers use the cash tax savings, regardless of their intention for avoiding tax in the first place.

The second point is that we are not necessarily capturing abnormal investment. That is, we cannot say whether the firm would have had the same level of investment in the absence of cash tax savings. As we do find that firms spend tax savings on investment, we can infer that the cost of capital for tax savings is less than or equal to the cost of capital for any alternative financing sources available to the firm (in accordance with the pecking order theory of corporate finance [Myers and Majluf, 1984]). As we observe that firms invest temporary tax savings to a greater extent than permanent tax savings, one may also infer that temporary tax savings have a lower cost of capital than permanent tax savings.

Firm-level financing constraints

Next, we examine whether firm financial constraints affect the amount of tax savings spent on investment. A firm is financially constrained with regards to investment if external capital is unavailable or costly. Such firms are likely under-invested, as the firm's higher cost of capital pushes investment projects into the negative net present value (NPV) range that would have otherwise been positive NPV.

The prediction here follows from the results of Edwards et al. (2016). Edwards et al. (2016) find that financially constrained firms increase their tax avoidance activities to generate cash tax savings, and that those cash tax savings are spent on investment and working capital. Of the additional tax avoidance activities, they estimate that 20-95% are from temporary tax avoidance activities. Although a wide range, this estimate suggests that temporary tax avoidance activities are probably responsible for the majority of the additional cash tax savings. They attribute this result to managers having not exhausted all of their available temporary tax avoidance opportunities.

If their intuition is correct, we should expect to see an even greater disparity between the usage of permanent and temporary tax savings for firms that are financially constrained. Accordingly, we predict that financially constrained firms will spend a greater proportion of temporary tax savings on investment than firms that are not financially constrained.

To test the effect of firm financing constraints on how tax savings are spent, we create two subsamples. The first subsample is restricted to firms that are fully financed by internally-generated funds (e.g., cash flow from operating activities). We define a firm as internally financed in the observation year if that firm has net cash inflow from operating activities, and net cash outflow to investing and financing activities. Internally-generated funds are considered the highest priority source of financing as they have the lowest cost of capital (Myers and Majluf, 1984). Hence, these firms are the least likely to seek and use tax savings for financing purposes as they already have optimal financing available for all of their investment projects. The results of this subsample test are also relevant to the AJCA literature. Blouin and Krull (2009) cite one reason for the failure of the AJCA repatriation holiday as being that repatriating firms were likely fully-invested and had no financial constraints. Tests on this subsample provide evidence about how fully invested firms use tax savings in non-AJCA settings.

Our second subsample consists of firms with investment-related financing constraints. These firms rely on external financing to fund new investment, but external financing is costly or unavailable. These firms have the highest incentive to seek and use tax savings as a source of financing. To identify these firms, we use the Kaplan-Zingales Index (KZ Index hereafter; Kaplan and Zingales 1997). We define a firm as having external financing constraints in the observation year if the firm's KZ Index score is in the top tercile of the sample distribution. Higher values on the KZ Index indicate investment-related financial constraints. The KZ Index score function is increasing in market-to-book and debt, while decreasing in cash flows, cash holdings, and dividends. The construction of our financially constrained subsample matches that used in Edwards et al. (2016) to identify financially constrained firms.

In their paper, Edwards et al. find that financially constrained firms increase their tax avoidance, generating additional cash tax savings to fund investment projects. We are testing this same group of firms, to see if they allocate a different portion of their tax savings towards investment. As reported back on Table 1, the average sample firm holds about half of their tax savings as cash. Financially constrained firms, therefore, could potentially get twice as much financing from allocating all of their tax savings towards investment. The result in Edwards et al. (2016) suggests that we may not observe this effect, as reallocating tax savings towards investment is a substitute for increasing tax savings. If firms can get twice as much financing from the same amount of tax avoidance, they would have less need to increase total tax savings.

Table 2 reports results from estimating equations (9) through (16) on the internally financed subsample (first four columns) and external financing constraints subsample (latter four columns). For brevity, only amounts allocated to investment (*invst_real, invst_sec, invst_acq*) and cash holdings (*Δcash*) are tabulated. There are two important inferences to be made from the results reported here. First, even internally financed firms spend a larger proportion of their temporary tax savings on real investment relative to permanent tax savings (22 cents versus 12 cents, difference significant at the 1% level). This result is relevant to the findings from the AJCA – Blouin and Krull (2009) attribute the failure of the AJCA's investment mandate partially to a lack of investment opportunities. The firms in our internally financed subsample have enough internally-generated cash flows to fund real investment, yet they still invest a substantial amount of their temporary tax savings.

The second inference from Table 2 relates to the financially constrained subsample. Whereas both permanent and temporary tax savings are primarily held as cash (versus used for real investment) for the internally financed subsample, only temporary tax savings see this relation swap for the financially constrained subsample. Financially constrained firms invest less of their permanent tax savings in real investment (23 cents) than they save as cash holdings (34 cents, difference significant at 8% level), but they invest more of their temporary tax savings in real investment (55 cents) than they save as cash holdings (23 cents, difference significant at the 1% level).

The results in Table 2 suggest that the range given by Edwards et al. (2016) – temporary tax avoidance represents between 20-95% of the additional cash tax savings for constrained firms – is likely on the higher side (e.g., more likely to be mostly temporary tax savings). Further, combining our result with the result observed in Edwards et al. (2016) highlights the ability of temporary tax avoidance to finance investment for financially constrained firms. Constrained firms engage in more tax avoidance than unconstrained firms (the result from Edwards et al. [2016]) *and* allocate more of their temporary tax savings towards investment (the finding from Table 2 in this manuscript). The incremental tax avoidance observed in Edwards et al. only captures part of the incremental financing that constrained firms obtain via tax avoidance.

Multinational and domestic firms

During our sample period, US-based multinationals are subject to US income taxation on worldwide profits. Multinational firms can avoid US income taxation on foreign earnings by delaying repatriation; however, this may reduce their ability to use the cash tax savings on investment (depending on the investment opportunities available at the foreign subsidiary). Additionally, cash tax savings from avoiding income taxes levied by the foreign country's government would also be locked out of the US (restricting the investment of those funds to the foreign subsidiary). The additional restrictions on cash tax savings related to foreign income suggests that multinational firms may invest less of their tax savings than domestic firms.

To test whether domestic and multinational firms spend tax savings differently, we split the sample according to domestic firms and multinational firms. We define a firm as a multinational firm if it has positive pretax income from foreign operations in the observation year. The remaining firms are classified as domestic.

Table 3 reports results of estimating equations (9) through (16) on the subsamples of domestic firms and multinational firms. For brevity, only allocations to investment (*invst_real, invst_sec, invst_acq*) and cash holdings (*Δcash*) are tabulated. Temporary tax savings are allocated towards real investment at a greater rate than permanent tax savings for both the USA Domestic (36 cents vs. 12 cents, difference significant at 1% level) and Multinational (15 cents vs. 9 cents, difference significant at 2% level) subsamples. However, multinational firms pivot some of their tax savings towards investment in securities. While domestic firms invest more of their temporary tax savings in real assets (36 cents) than securities (15 cents, difference significant at 1% level), multinational firms invest similar amounts of temporary tax savings in real assets (15 cents) and securities (26 cents, difference not significant at traditional levels). The results suggest that providing temporary tax savings to domestic firms leads to the highest rate of investment for tax savings.

SUPPLEMENTAL ANALYSIS

Negative Tax Savings

One particularly important aspect of temporary tax savings is that they reverse. Taxes saved in the current year will be offset by equivalent tax increases in future years. This feature can be somewhat concerning with respect to investment incentive policies like bonus depreciation. Bonus depreciation gives firms additional cash at the start of the policy. However, when the policy is ended, firms face a cash crunch temporary tax savings must be repaid. An important question for policymakers, then, is whether firms can sustain their increased level of investment when temporary savings reverse. The actions of policymakers suggest that they recognize this concern. The first round of bonus depreciation ended abruptly, going from 50% to zero in 2005. For the second round of bonus depreciation (beginning in 2008), policymakers decided to gradually reduce the rate. Rather than abruptly ending bonus depreciation, the recently enacted Tax Cuts and Jobs Act of 2017 gradually phases out bonus depreciation by reducing the rate each year over five years. This should mitigate the impact of the reversals – but what is the impact of reversals?

To address this question, we construct a new sample the same as our main sample but with one difference: we limit the sample to firms with *negative* tax savings, rather than limiting to firms with positive tax savings. This means that sample firms paid tax in excess of the statutory rate during the observation year. By re-performing our main analysis on this sample, we seek to obtain evidence on how firms pay excess tax bills. If these firms revert to the level of investment they had before the temporary tax benefits, we expect to see estimation results similar to Table 4. In that case, firms would be paying the excess tax bill from the same sources that received the cash tax savings. If the firm's investment level is sticky, we would expect firms to fund their tax payments with debt or equity financing or from cash holdings, rather than reducing outflows to investment.

Table 4 reports results of estimating equations (9) through (16) on the sample of firm-year observations with negative tax savings. As the "tax savings" variables (*permtaxsave* and *temptaxsave*) are negative, the coefficient estimates on Table 4 reflect *sources* of cash used to fund additional tax payments – either reductions in capital expenditures or cash holdings, or amounts raised from debt or equity issuances. Results suggest that investment does revert, but not completely. Column (1) of Table 4 shows that firms reduce real investment by 10 cents for every dollar of temporary cash tax savings that must be repaid. Comparing this to Table 1, we see that firms had initially invested 30 cents per dollar of temporary cash tax savings. Hence, the reduction in investment associated with repayment of temporary tax savings is roughly one-third of the initial increase to investment associated with the firm's receipt of those temporary tax savings.

How are firms financing repayment of temporary tax savings, if not through reductions to investment? Column (5) of Table 4 reports that firms issue 44 cents of debt per dollar of repaid temporary tax savings, where Column (10) of Table 4 reports that firms issue 11 cents of new equity per dollar of repaid temporary tax savings. Firms also dip into their cash holdings, spending 24 cents from cash holdings per dollar of repaid temporary tax savings. Overall, the results in Table 4 are consistent with temporary-tax-savings-financed investment being partially sticky upon the reversal and repayment of the related temporary tax savings.

CONCLUSION

In this paper, we investigate whether firms spend temporary cash tax savings differently from permanent cash tax savings. We find that temporary tax savings are used for real investment to a greater degree than permanent tax savings, where permanent tax savings are used to pay down debt to a greater degree than temporary tax savings. In reversal tests, we find that the investment increase attributable to temporary tax savings is partially transitory, with the remainder being financed by debt issuances and cash holdings. In cross-sectional analyses, we find that heterogeneity in the usage of tax savings is primarily driven by heterogeneity in the usage of temporary tax savings, relative to permanent tax savings. We also find that, for all cross-sections analyzed in this manuscript, temporary tax savings are used for real investment to a greater extent than permanent tax savings.

Our paper contributes to the literature on tax avoidance by demonstrating that firms use temporary tax savings as a source of financing. Our research extends Guenther et al. (2020), providing evidence that permanent and temporary tax savings are used differently (and particularly, that temporary tax savings are more likely to be invested). Our findings also complement Edwards et al. (2016) by showing that constrained firms not only increase their temporary tax avoidance, but they allocate a different portion of their temporary tax avoidance to investment.

Our research is also of interest to the general public (given concerns about tax avoidance) and policymakers (who have stated their desire that tax incentives be used for investment). we show that providing tax breaks to firms does provide valuable financing capital for real investment, but that the amount invested will depend on the type of tax break offered (permanent or temporary) and on the characteristics of the firm and the firm's operating environment.

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