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## *Research School of Accounting*

### **Literature Review of the PCAOB: Auditor Oversight System and Unintended Consequences**

**Tom H. Lillywhite  
Dongyue Lyu  
Muchamad Arif Zamani**

*The Australian National University*

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**ABSTRACT:** The Sarbanes-Oxley Act 2002 (SOX) established the Public Company Accounting Oversight Board (PCAOB) as an independent regulator to oversee the auditors of public companies. This shift represented direct government intervention in an audit oversight system designed to protect the interests of investors through ensuring audit quality in the preparation of informative, fair, and independent audit reports. Our paper first documents the rapid increase in the direct costs of the PCAOB. Our paper then summarizes the existing literature on the intended and unintended consequences of the PCAOB's performance in carrying out its registration, standard setting, inspection, and enforcement functions. We note the creation of the PCAOB incentivized small firms to exit the U.S. audit market, however prior studies have differing conclusions of the impact of exiting firms on audit quality. Further, small audit firms are more likely to undertake mergers. Whilst the PCAOB's auditing standards are found to increase information value, the PCAOB's role in standard setting is suggested to be unproductive and requires fundamental reform. Most research has focused on inspections, noting the PCAOB regime has led to increases in audit quality and an overall improvement on the AICPA's peer review program. Research has often overlooked enforcement; however PCAOB enforcement actions create a market signal of audit quality, incentivizing audit firms to avoid disciplinary action. Further research on overall PCAOB effectiveness is warranted, particularly in quantifying the benefits and costs of a public oversight system.

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## I. Introduction

Large scale market failures incentivize lawmakers to increase regulatory oversight<sup>1</sup>. The high-profile accounting and auditing failures in the early 2000s precipitated the introduction of the Sarbanes-Oxley Act (SOX) by the United States Congress in 2002. SOX was designed to increase the effectiveness of corporate governance regulation and the existing audit oversight system (Kinney Jr, 2005). One fundamental change ushered in by SOX was shifting audit firm oversight from self-review to independent monitoring, by the Public Company Accounting Oversight Board (PCAOB). The implementation of SOX, including the creation of the PCAOB, was the regulatory response to market turbulence, also referred to as a “fire-alarm” approach (Kinney Jr, 2005).

SOX provides the PCAOB with registration, standard setting, inspection, and enforcement powers to audit firms that audit the financial statements of public companies, another issuer, or a broker-dealer of the U.S. stock exchange market. The Act also gives the SEC oversight authority over the PCAOB. Academic literature is most concerned with the effectiveness of the regime, and the premium required in exchange for effective audit oversight.

As part of the previous self-governance regime, the American Institute of Certified Public Accountants’ (AICPA) peer review program was criticized for allowing firms to select their own reviewers and propose the audit review area. This indicates the peer review process was deficient with respect to independence, as audit firms could have strategically influenced their review report outcomes. However, Hilary and Lennox (2005) examine the gain and loss of audit clients following the peer review report and find that audit firms gained clients after receiving clean opinions and lost clients after receiving modified or adverse opinions from the peer review process. They suggest that peer review does provide a credible signal of audit quality differences among the audit firms reviewed. Casterella, et al., (2009) find the number of weakness identified in peer review reporting were associated with the likelihood of a malpractice claim (audit failure). Lennox and Pittman (2010) examine the gain and loss of audit clients following the PCAOB inspection and peer review reporting process, and conclude that audit clients did not perceive PCAOB inspection reports as being valuable for signaling audit quality. These findings suggest the peer review program does provide credible

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<sup>1</sup> The collapses of Enron, WorldCom, Waste Management and other high profile corporate breakdowns, followed by the disintegration of Arthur Andersen, could be considered to constituted a market failure.

information about quality differences between audit firms, and may hold more information than the PCAOB report.

However, DeFond (2010) argues the absence of information value within the PCAOB inspection report (Lennox & Pittman, 2010) does not mean that PCAOB inspections are ineffective. Whilst the PCAOB aims to send a reliable signal of audit quality, it is more concerned with increasing actual audit quality. Knechel (2016) explains the key elements of audit quality are expertise (competence or knowledge) and objectivity (independence). These fundamental principles relate to the likelihood of the PCAOB discovering audit deficiencies and correcting or revealing said deficiencies. Prior studies (Carcello, et al., 2011; Gunny & Zhang, 2013; Elnaby, et al., 2013) argue the PCAOB may have greater capabilities and independence than the self-regulated regime, enabling it to increase audit quality. The PCAOB invests most of its budget on the inspection process, such as hiring qualified inspectors and spending on training, research and development. The PCAOB is independently funded and does not provide audit and assurance services. However, Glover et al., (2009) argue the PCAOB were less likely to have greater competency as its inspectors have no relationship with the professional association. The auditing and accounting knowledge of inspectors may be impaired as they were previously auditors. Despite these arguments, Carcello, et al., (2011) and Lamoreaux (2016) find the audit quality of audit firms increases after PCAOB inspections, as indicated by decreases in clients' discretionary accruals following the PCAOB inspections.

Critical review papers observe that audit oversight reforms in SOX may be misguided, insufficient (Moore, et al., 2006), or dysfunctional (Glover, et al., 2009). Moore, et al. (2006) argue the audit oversight reforms focus mostly on independence in appearance rather than independence in fact. Schipper (1998) also notes that political representatives are scarcely independent, as they are appointed to represent a constituency and not as an independent expert. This process can lend itself to regulatory capture, perhaps evidenced by appointing a former Big-4 executive to the SEC chief accountant role. As the SEC's chief accountant, an individual has the authority to oversee the PCAOB. An article from Levinson (2015) notes the appointment of an ex-executive of a Big-4 firm was related to the sound knowledge in auditing and accounting standards, and extensive experience interacting with regulators. However, it was associated with a potential conflict of interest, as it had been attributed with thwarting PCAOB efforts to implement rules that would increase auditors' accountability to investors.

Arguably, there appears to be a trade-off of independence and expertise for the audit regulator.

Reviewing the findings of reform in the new era of audit oversight system, the PCAOB may not only achieve its intended consequences, but in the process, may create unintended consequences (DeFond & Francis, 2005). There may be a trade-off between regulation reform and the underlying economic fundamentals of the audit market that develop into unintended consequences (Knechel, 2016). Regulatory reform is designed to address one single economic interest through government intervention, and may be conflicting with another economic interest (Stigler, 1971; Peltzman 1976). As government regulation has aimed to transfer risk to audit firms, client issuer firms and the PCAOB have queried whether risk mitigation activities that increase audit quality are worth the snowballing cost (Palmrose, 2006).

Since the PCAOB's implementation in 2003, studies have examined the implications of the public oversight audit mechanism, including audit quality, information value, and the effectiveness of the oversight process. Abernathy, et al., (2013) summarize research on the PCAOB and notes that during the 10 years post-PCAOB, studies have examined the effectiveness of the Board's registration process, standard setting role, inspection performance, and enforcement of disciplinary orders. Lohlein (2016) reviews studies on the peer review system and PCAOB inspections process to synthesize the research on the regulatory regime. Our paper extends these papers by summarizing prior research and identifying intended and unintended consequences of the PCAOB, particularly relating to the public oversight system, audit quality, and the audit market in creating the PCAOB. We also make recommendations for future research.

The intended contribution of this report is to summarize the literature identifying intended or unintended consequences of the PCAOB's audit oversight system, in relation to audit quality to protect investors, changes in audit behaviour, and the audit market. This paper also contributes to the discussion on the benefits and costs of the PCAOB and should be of interest to lawmakers, researchers, and industry professionals to enable them to continually seek improvement of the public audit oversight system.

In reviewing the literature, we identify key research papers summarized by Abernathy, et al., (2013) and Lohlein (2016) and extend the review to the current research examining the PCAOB, particularly on its registration, standard setting, inspection, and enforcement

frameworks. We then selected relevant studies from sources such as ANU online library, ProQuest, Google Scholar, Wiley Online Library, Social Science Research Network, ScienceDirect, and Jstor. We also summarize relevant information, as well as articles, press releases, and annual reports issued by the PCAOB and regulatory bodies including the Institutional Auditing and Assurance Standards Board (IAASB) and the Government Accountability Office (GAO) in the U.S.

The remainder of our paper is organized as follows: Section II outlines the description of the PCAOB. Section III reviews the literature concerning intended and unintended consequences of the PCAOB. Section IV provides discussion of potential future research in the public audit oversight system and section V outlines the conclusion.

## **II. Description of the PCAOB**

On July 30, 2002, Congress enacted SOX, with the creation of the PCAOB being one of its prominent regulatory changes (Abbott, et al., 2013). SOX provides the SEC with the authority to oversee the PCAOB. The SEC appoints and removes the PCAOB's members, and approves its rules, by-laws, ethics code, and any auditing standards it promulgates (Gradison & Boster, 2010). The SEC must approve the PCAOB's budget and accounting support fees, and may review appeals of adverse Board inspection reports and disciplinary actions against registered audit firms (PCAOB, 2003).

### *Goals and authority of the PCAOB*

The PCAOB was established by U.S. Congress as an independent, non-profit, and non-governmental body to oversee the auditors of publicly traded companies to accomplish its mission: "to protect investors and the wider public interest in the preparation of informative, accurate, and independent audit reports" (PCAOB, 2003). The PCAOB's core values have remained unchanged: public interest and stewardship; excellence, integrity, and fairness, and teamwork and diversity (PCAOB, 2016). Each year, the PCAOB releases a Strategic Plan that sets forth goals, objectives and strategies to achieve its mission. For instance, the Board's strategic goals for 2016-2020 are focused on Effective Oversight, Constructive Impact and Dedicated People (PCAOB, 2016). Based on these goals, several strategies have been adopted and the PCAOB's performance relative to these goals helps to establish the Board's overall effectiveness.

The PCAOB has the authority to register, inspect, and enforce the audit firms that audit financial statements of public companies listed in the U.S., including setting the auditing standards. To be able to perform audit services for public companies in the U.S., audit firms must register with the PCAOB. Firms are required to pay a registration and annual fee to the PCAOB. The inspection rate of audit firms is subject to the number of public companies it audits. Registered audit firms that release audit reports for more than 100 public companies are subject to annual inspections, whereas those that release less than 100 are subject to triennial inspections (PCAOB, 2016). However, if deemed necessary, the PCAOB may inspect any audit firm based on the Board's risk assessment. The PCAOB has authority to enforce disciplinary actions and terminate the registration of audit firms if audit deficiencies are found in their inspection reports.

#### *Growth of the PCAOB<sup>2</sup>*

Figure 1 depicts the growth of the number of registered firms, including U.S. and non-U.S. firms. As shown, in 2003, 735 U.S. audit firms were registered with the PCAOB, and doubled after one year (PCAOB, 2003). Following the introduction of the PCAOB, Fargher, et al., (2017) document that 618 small audit firms exited the audit market of U.S. public companies post SOX to the end of 2008. Due to the expiration of the last of a series of SEC orders that granted temporary exemptions to registered broker-dealers from the statutory requirement that their balance sheets and income statement be audited by PCAOB registered firms, there was a surge in registration applications, and more than 400 audit firms with broker-dealer audit clients registered with the Board (PCAOB, 2009). Further, for non-U.S. firms, registration started from 2004 onwards (PCAOB, 2004). By the end of 2015, 2,107 audit firms registered with the PCAOB, including 1,208 U.S. firms and 899 non-U.S. firms (PCAOB, 2015).

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<sup>2</sup> The data are collected from the annual reports of PCAOB. The raw data is presented in the Appendix.

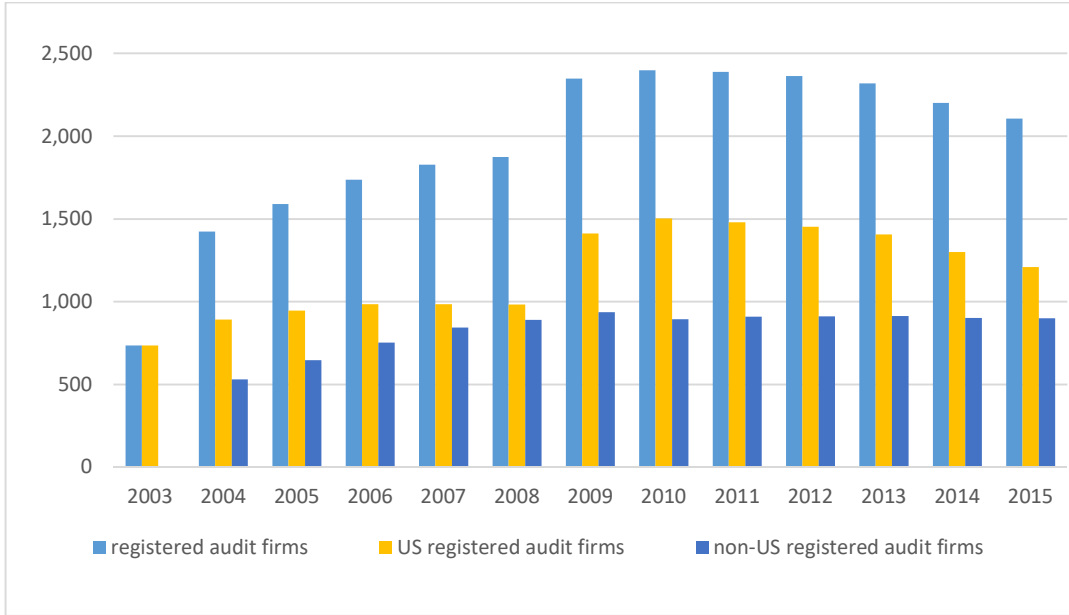


Figure 1 Bar chart depicting the number of registered firms

As shown in Figure 2, the total net operating revenue keeps increasing from the year 2003 to 2015 basically. Pursuant to SOX, the SEC mandates an annual accounting support fee, assessed on issuers whose shares are publicly traded and investment companies (collectively referred to as “issuers”) and brokers and dealers (from 2011, under the Dodd-Frank Act), to maintain the operations of the PCAOB (PCAOB, 2011). The accounting support fee is established annually by the Board, based on the PCAOB’s operating budget for each calendar year and any additional amounts required to fund the PCAOB’s operations (PCAOB, 2011). As shown in Figure 3, the Issuer Accounting Support Fee accounted for nearly 90% of the total operating revenue.

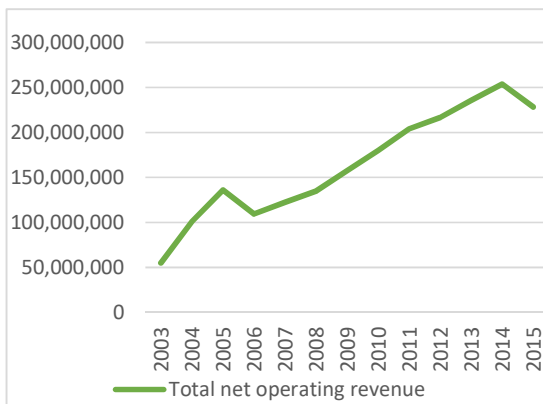


Figure 3 Trend analysis for total operating revenue

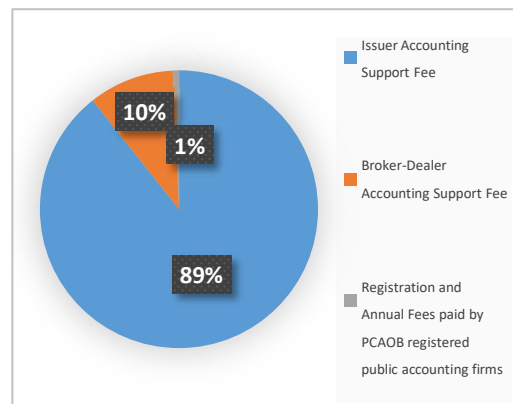


Figure 3 Pie chart for average revenue from 2011 to 2015



During the expansion of the PCAOB, it was expected that staffing would increase as the Board implemented its standard setting, inspection, and enforcement responsibilities. The trend analysis shows that staffing has increased dramatically since 2003. As shown in Figure 4, the PCAOB had 118 full-time employees in its first year of operation (2003). At the conclusion of 2015, the PCAOB had 851 employees (PCAOB, 2015) and it plans to have 876 employees by the end of 2016 (PCAOB, 2016).

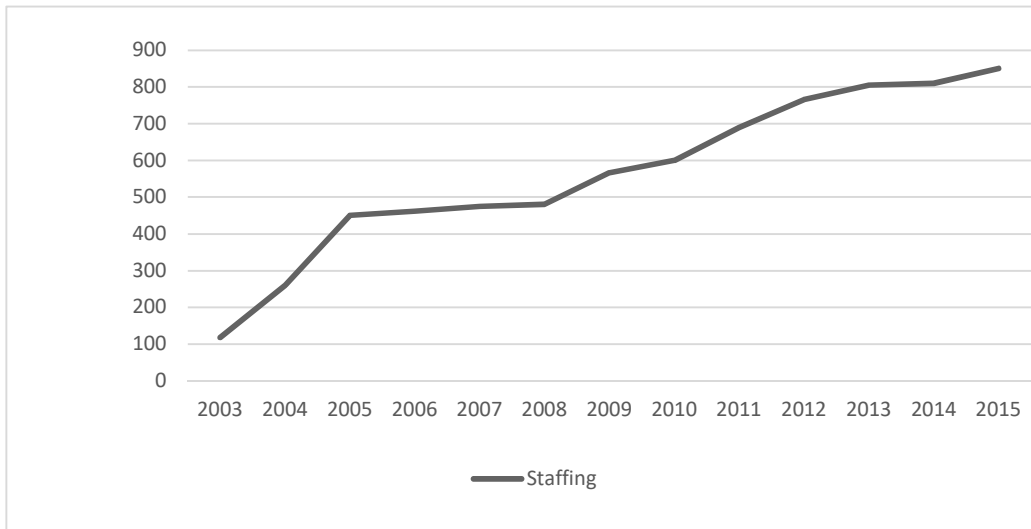


Figure 4 Trend analysis for the number of employees

In Figure 5, the number of inspected firms is shown from 2004 to 2015. Except for the initial three years, the number of inspected audit firms is statistically steady. Further, from 2009, firms with broker-dealer audit clients were required to register with the Board (PCAOB, 2009). As a result, inspections of broker-dealer firms have been conducted since 2013. On average, 15 percent of U.S. registered firms and 5 percent of non-U.S. registered firms were inspected every year from 2004 to 2015. This is interesting, as most registered audit firms are inspected triennially, and we expected the rate of inspection would be at 30 to 40 percent each year. This outlier may be caused by a higher rate of turnover of registered audit firms, and a higher number of registered firms with no audit work from issuers, brokers or dealers. However, we have data limitations, making it difficult to verify this conclusion.

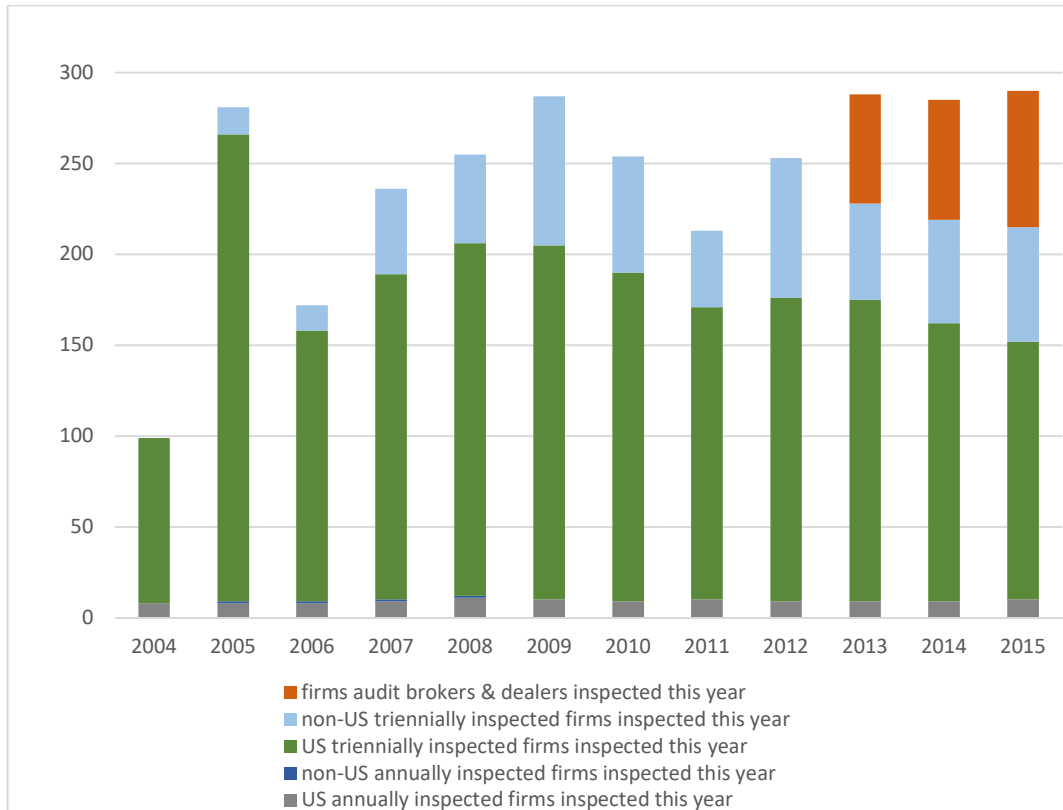


Figure 5 Bar charts for the number of inspected firms

Figure 6 shows that PCAOB operating expenses have increased dramatically from 2003 to 2015. The total operating expense for 2015 is \$250 million, an increase of 750 percent from 2003 (\$29 million). Further, the PCAOB’s 2017 budget is \$268 million, an increase of 4.2 percent from the Board’s 2016 budget (PCAOB, 2016). The supporting activities expense and the total operating expense increased significantly in 2005, which can be explained by 2005 being the first-year inspections of non-U.S. registered audit firms, as well as starting to publish reports on the first full inspections of U.S.-based audit firms (PCAOB, 2005). Registration and inspections expense increased sharply in 2013, which can be explained by 2013 being the introductory year of firms with broker-dealer clients registering with the PCAOB. However, even though the number of registered firms and inspections is steady from 2009 to 2012, the number of employees and the operating expenses during that period continue to increase.

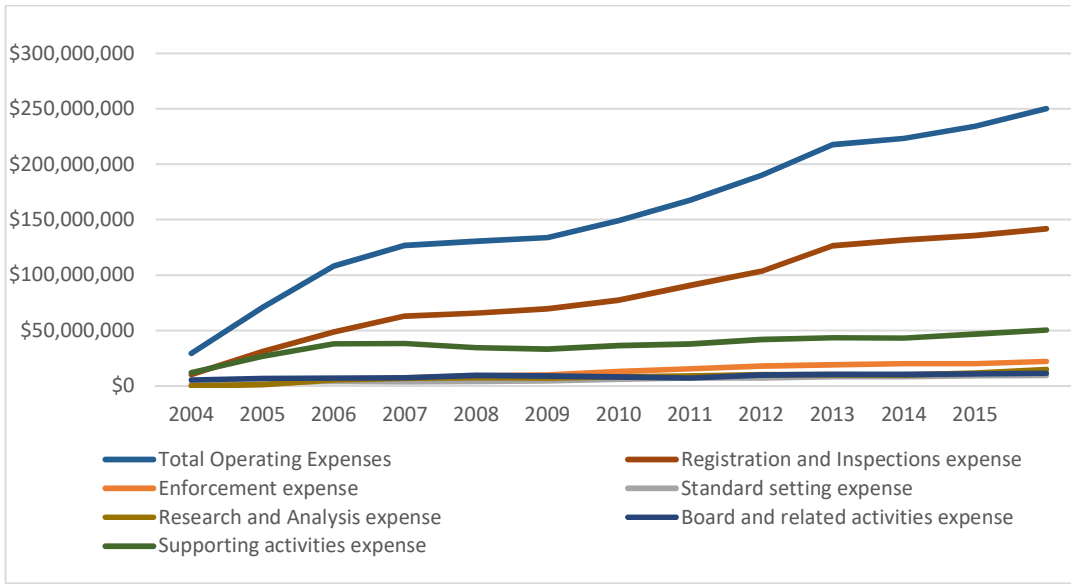


Figure 6 Trend analysis for operating expenses

Figure 7 depicts the trend analysis for registration and inspection expenses per audit performed from 2010 to 2015.<sup>3</sup> The expense per audit performed has increased significantly by 60 percent (from \$95,434 to \$153,282).

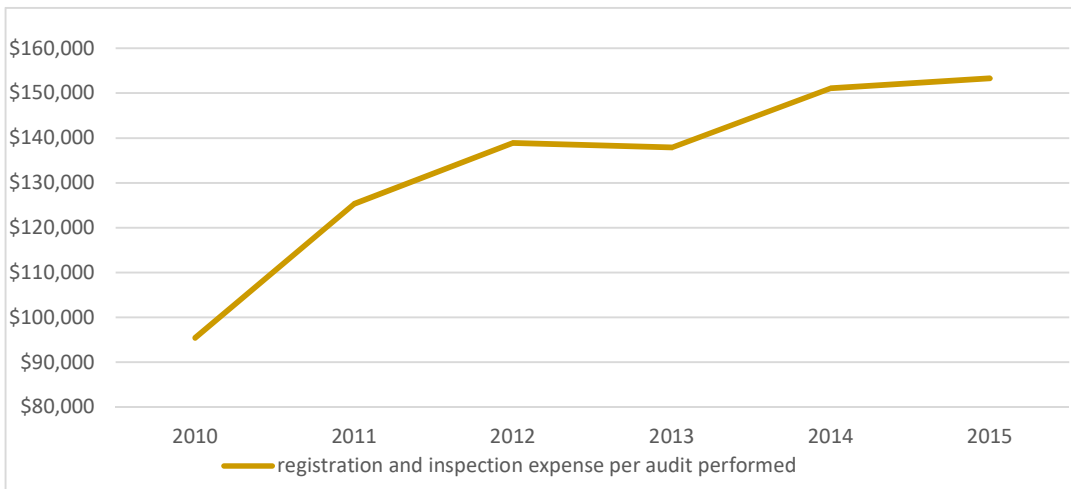


Figure 7 Trend analysis for registration and inspection expense per audit performed

The PCAOB has continued to grow significantly, with respect to the number of registered firms and an overall increase of 187 percent (2003: 735; 2015: 2,107). Staffing increased by 621 percent (2003: 118; 2015: 851), revenue increased by 316 percent (2003: \$54.9 million;

<sup>3</sup> The number of examined portions of audits performed is absent from the year 2004 to 2009.

2015: \$228.1 million), and total operating expenses increased by 750 percent (from \$29.4 million to \$250.1 million). This growth is likely to continue to increase.

### **III. Literature Concerning Intended and Unintended Consequences of the PCAOB**

#### *Registration*

Section 102 of SOX requires any audit firm that prepares or issues an audit report with respect to any SEC-registered issuer, broker or dealer to register with the PCAOB. Audit firms must complete an application and an annual report form, and may be required to complete more documents in other circumstances. Registered audit firms are required to pay registration fees dependant on the number of issuer audit clients annually. Further, from 2010 onwards, the Board mandated that all registered audit firms are required to pay an annual fee, based on the firm's number of issuer audit clients and personnel (PCAOB, 2010). These registration fees are not perceived as costly by audit firms (Read, et al., 2004).

Through the registration process, the PCAOB maintains demographic information of audit firms to ensure each firm is subject to its oversight activities. The PCAOB is further able to monitor the change of audit firm demography or any relevant information based on the annual report submitted to the PCAOB. This process enhances the capability of the PCAOB in planning the risk based inspection process and monitoring registered firms. Abernathy, et al. (2013) review two studies, published between 2002 and 2012, concerning PCAOB registration, concluding considerable rates of deregistration among smaller firms. Our study extends the literature review concerning the PCAOB's registration framework. We summarize and identify those studies as presented in the Table 1.

Following the registration provision, Read, et al., (2004) note that small auditors exited the audit market of the U.S. public companies post-SOX. This may be an intended consequence, since small auditors are suggested to have lower audit quality (DeAngelo, 1981). Further, Lennox and Pittman (2010) document that small firms with adverse or modified opinions on peer reviews were less likely to register with the PCAOB. Based on these findings, the registration process has most likely incentivized lower quality auditors to exit the SEC audit market.

Table 1. Registration Framework

Organizational Framework of PCAOB	Objective	Results	
		Intended	Unintended
<ul style="list-style-type: none"> <li>- SOX requires audit firms that prepare or issue an audit report for a public company or another issuer, or a broker-dealer, or to play certain roles in those audits to register with the PCAOB (PCAOB, 2016).</li> </ul>	<ul style="list-style-type: none"> <li>- Maintain the demographic data of audit firms, to ensure each firm is subject to the oversight activities assigned to the PCAOB (PCAOB 2015).</li> </ul>	<ul style="list-style-type: none"> <li>- Low quality auditor exiting the audit market for public companies (Read, et al., 2004) (DeFond &amp; Lennox, 2011).</li> <li>- Small firms with adverse or modified opinions on peer reviews were less likely to register with the PCAOB (Lennox &amp; Pittman, 2010)</li> </ul>	<ul style="list-style-type: none"> <li>- Smaller firms exit due to disproportionate financial impost (DeFond &amp; Lennox 2011). Those firms are not necessarily of lower quality (Fargher, et al., 2017). This may be creating monopolistic pricing power by bigger audit firms (Glover, et al., 2009).</li> <li>- Local and regional audit firms with no SEC clients are voluntarily registered with the PCAOB to signal audit quality to non-SEC registered clients and other stakeholders (Read, et al., 2004).</li> <li>- Small audit firms are more likely to merge among themselves or acquired by larger firms (Christensen &amp; Smith, 2016)</li> </ul>

Further, DeFond and Lennox (2011) investigate the difference in audit quality of small firms exiting the market and the issuer clients' successor auditors during 2001-2008. They find the successor auditors had higher audit quality comparative to the previous smaller auditors, as indicated by the greater likelihood of the successor auditor disclosing a going concern opinion. This affirms the argument that the audit quality of exiting smaller firms was lower, as said firms avoided peer reviews and PCAOB inspections, and did not wish to comply with PCAOB rules. However, Fargher, et al. (2017) suggest that smaller exiting firms are not necessarily of lower audit quality. They extend DeFond and Lennox (2011) by examining the quality of audited financial statements as indicated by discretionary accruals and the likelihood of restatement. They do not find any evidence that small exiting firms possess lower audit quality than their successor.

The economic consequence of the implementation of the PCAOB is the increase in compliance cost. This may incentivize registered firms either to increase the audit fees or to lose clients as they cannot compete with larger audit firms. Read, et al., (2004) note that local and regional audit firms were more likely to stop performing audits for SEC registered clients. Based on interviews with local and regional partners that exited the audit market from 2002 to 2003, they find that audit partners perceived the PCAOB as increasing professional liability insurance costs, and increasing scrutiny of SEC registrants. Following the exodus of small firms during the introduction of SOX, an unintended economic consequence may also arise such as inadvertently creating monopolistic pricing power by bigger audit firms as suggested by Glover, et al. (2009).

Read, et al. (2004) document that there were small audit firms with no SEC clients voluntarily registering with the PCAOB because it was believed to signal audit quality to the non-public company audit market and other stakeholders. This implies that registering with the PCAOB is not the cost barrier, rather compliance with PCAOB regulation was perceived as costly.

Christensen and Smith (2016) argue that compliance cost and regulation shock may incentivize smaller audit firms' strategy to beat market competition and continue growing. They document that post-SOX, there were significant rates of mergers among smaller firms and acquisition of smaller firms by larger audit firms. However, they also suggest that merger activities may have a detrimental effect on audit quality, since clients of the successor audit firms are found to be less likely to receive going concern opinions.

### *Standard Setting*

The PCAOB has authority to set standards governing the preparation and issuance of audit reports under Section 103 of SOX with the approval of the SEC. SOX specifically requires auditors to attest to management representation on the effectiveness of internal controls over financial reporting (ICFR), auditor independence, and audit firm transparency. In governing those standards, the Board considers issues arising during the inspection process, the need to develop its interim auditing standards, input from the PCAOB Standing Advisory Group (SAG), Investor Advisory Group (IAG), and consultation with the SEC. The PCAOB aims to provide investors, auditors, preparers of financial statements, and regulators the opportunity to add to the discourse on standards as they are developed (PCAOB, 2016). Moreover, the PCAOB is committed to continually evaluating the effectiveness of its standards and whether it is accomplishing its intended purpose (PCAOB Strategic Plan, 2016).

Abernathy, et al. (2013) note the PCAOB has adopted pre-existing AICPA General Accepted Auditing Standards (GAAS) as its interim standards, and has established 16 audit standards from 2003 to 2013. Later, the PCAOB established Auditing Standard 17 "Auditing Supplemental Information Accompanying Audited Financial Statements" and Auditing Standard 18 "Related Parties". Effective from December 31, 2016, the PCAOB released amendments of auditing standards that reorganized rules based on topical structure and to incorporate a new numbering system. This reorganization is without redrafting the standards,

imposing new requirements on auditors, or making substantive changes to the requirements (PCAOB, 2015).

Knechel (2016) suggests that auditing standards can effectively maintain higher audit quality as auditors have guidance in performing the audit. Further, Glover, et al., (2009) argues the PCAOB's authoritative role may be allowing for a more independent environment for the issuance and adoption of auditing standards. However, Glover, et al also highlight inefficient and dysfunctional problems of the PCAOB in governing the standard-setter role. In this section, we summarize and identify studies on the implication of ICFR, auditor independence, audit documentation, and engagement partner disclosure standards as presented in the table 2.

Criticism aimed at the PCAOB for deficient expertise in the standard setting process is due to the minimal engagement of outside experts and entities such as the Audit Standard Board (ASB) in the creation of PCAOB auditing standards (Gradison & Boster, 2010). Whilst the PCAOB claims its working relationship with standard setters has increased (PCAOB, 2016) it has little influence on the output of other standard issuers. Following this, the ASB became more focused on aligning itself to the International Auditing and Assurance Standards Board (IAASB) and creating International Auditing Standards. Gradison and Boster (2010) argue the PCAOB has focused on converging (adopting) auditing standards, and not creating them. Consequentially, U.S. leadership<sup>4</sup> in auditing standard setting may be impaired due to unproductiveness (Glover, et al., 2009). This is due to most PCAOB standards being adopted from the former ASB standards, and arguably, its standards are unclear and delayed in guidance (Glover, et al., 2009). If the involvement of experts is low, poor quality standards follow due to an absence of clarity and coordination across different standards setters. Glover, et al., (2009) suggest the role of the PCAOB as the auditing standard setter makes it increasingly difficult for audit firms that practice across jurisdictions due to multiple sets of standards, inconsistencies, and quality concerns. The economic consequence is the increase of compliance cost, as firms must comply (at least) with standards from the PCAOB, ASB, GAO, and IAASB.

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<sup>4</sup> Prior to early 2000s, the United States was the clear world leader in audit standards setting (Glover, et al., 2009)

### *Internal Control over Financial Reporting Standard*

Strengthening the internal control system of public companies is one of the major reform areas identified in the conception of SOX. In accordance with this, the PCAOB introduced Auditing Standard No.2, an Audit of Internal Control over Financial Reporting Performed in Conjunction with an Audit of Financial Statements (AS 2) that subsequently replaced by Auditing Standard No.5, an Audit of Internal Control over Financial Reporting that is integrated with an Audit of Financial Statements (AS 5). In 2015, this standard was reorganized as Audit Procedure 2200 Auditing Internal Control over Financial Reporting. The standard regulates how auditors attest and report to management's representations on the effectiveness of ICFR. Arguably, auditor reporting on the internal control assessment is expected to enhance transparency, executive accountability, and good corporate governance. Schneider, et al. (2009) review academic literature pertaining to internal control evaluation post-SOX, and note that riskier companies are reflected in internal control deficiency reports. Rice and Weber (2011) examine the association of accounting losses, prior restatements, and weaknesses identified in the prior internal control assessment report, with existing internal control weaknesses. They suggest that internal control reporting provides investors with advanced warning of potential accounting problems. Shelton and Whittington (2008) perform an experiment with 36 investment analysts with an average 9 years' experience, and found that auditor assessment of internal control risk provides information to investment analysts regarding investment risk. These findings align with the expected result of greater emphasis being placed on ICFR by the PCAOB in an effort to further protect investors.



Table 2. Standard Setting Framework

Organizational Framework of PCAOB	Objective	Results	
		Intended	Unintended
<ul style="list-style-type: none"> <li>- SOX mandates the PCAOB to establish and/or adopt auditing standards and standards of quality control, ethics, and independence.</li> </ul>	<ul style="list-style-type: none"> <li>- Complementing the auditing standards released by the profession. The PCAOB has released auditing standards, ethics and independence rules, quality control standards, and attestation standards as mandated by SOX (PCAOB, 2016).</li> </ul>	<ul style="list-style-type: none"> <li>- Allowing for a more independent environment for the issuance and adoption of auditing standards (Glover, et al., 2009).</li> </ul>	<ul style="list-style-type: none"> <li>- The loss of U.S. leadership with respect to auditing standards (IAASB becoming the world's audit standards leader) (Glover, et al., 2009); PCAOB focus has been centered on converging standards, not creating them (Gradison &amp; Boster, 2010). Large audit firms that practice both domestically and internationally must comply (at least) with standards from the PCAOB, ASB, GAO, and IAASB. Multiple sets of standards may be inefficient and problematic (Glover, et al., 2009).</li> <li>- Poor standard setting quality, and unclear and delayed guidance (i.e. the replacement AS2 by AS5) (Glover, et al., 2009)</li> </ul>
<ul style="list-style-type: none"> <li>- AS 2200: Auditing Internal Control over Financial Reporting (ICFR).</li> </ul>	<ul style="list-style-type: none"> <li>- Assure the internal control system of the client.</li> </ul>	<ul style="list-style-type: none"> <li>- Riskier companies that have weaker boards, audit committees, and financial management are reflected in internal control deficiency report (Schneider, et al., 2009).</li> <li>- Internal control reporting provides investors with advanced warning of potential accounting problems (Rice &amp; Weber, 2012)</li> <li>- Auditor assessment of internal control risk provides information to investment analysts (Shelton &amp; Whittington, 2008)</li> </ul>	<ul style="list-style-type: none"> <li>- Audit fees were about 86% higher in the post-SOX report period prior to May 15, 2005, following the introduction of AS2 (Raghunandan &amp; Rama, 2006), however audit fees decrease following the introduction of AS5 as the replacement of AS2 (Wang &amp; Zhou, 2012).</li> <li>- Audit report lag increase on 10 to 15 days on average following the enactment of ICFR and audit documentation standards (Bronson, et al., 2011).</li> </ul>
<ul style="list-style-type: none"> <li>- Rule 3520: Auditor Independence.</li> </ul>	<ul style="list-style-type: none"> <li>- Prohibits audit firms from providing certain non-audit services to audited companies (SOX, 2002).</li> <li>- Required lead audit partner rotation every five years rather than every seven years (SOX, 2002).</li> <li>- Requires audit committee pre-approval of all audit and non-audit services (SOX, 2002).</li> <li>- Minimizing the possibility that any external factors will influence auditor judgment (PCAOB, 2004).</li> </ul>	<ul style="list-style-type: none"> <li>- The banning of the joint provision of auditing and consulting services may be working to eliminate collusion (Pargano &amp; Immordino, 2007).</li> </ul>	<ul style="list-style-type: none"> <li>- Audit firms may struggle with the tradeoff of cost and benefits of the audit. Therefore, due to loss of income from non-audit services and requirement to increase audit quality, the audit fee may increase (Knechel, 2016).</li> <li>- Clients lose the benefit of having non-audit services provided by an expert from one firm also providing the audit (Knechel &amp; Sharma, 2012).</li> </ul>
<ul style="list-style-type: none"> <li>- Audit documentation standards</li> </ul>	<ul style="list-style-type: none"> <li>- Audit documentation supports the auditor's findings, as well as assisting in the planning, performance, and supervision of the engagement (PCAOB 2016), to improve auditor judgment, including auditor objectivity and professional skepticism (Piercey, 2011)</li> </ul>	<ul style="list-style-type: none"> <li>- Detailed documentation was associated with more extensive review of audit evidence, and hence to lead to better error detection (Payne &amp; Ramsay, 2008).</li> </ul>	<ul style="list-style-type: none"> <li>- Increases in audit documentation tended to be associated with more lenient auditor judgment and less quantitative risk assessment (i.e. perform fewer tests and highly reliant on internal control) (Piercey, 2011)</li> </ul>

<ul style="list-style-type: none"> <li>- Mandatory disclosure of the engagement partner on the audit report</li> </ul>	<p>Transparency regarding the partner and firm involved further incentivizes auditors to conscientiously increase the quality of the audit and provide reliable comfort to investors (Doty 2015).</p>	<ul style="list-style-type: none"> <li>- Disclosing the name of engagement partner on the audit report incentivizes partner to maintain their reputation (Lambert, et al., 2013).</li> <li>- Mandatory disclosure of the engagement partner on the audit report was associated with reduced earnings management, more qualified opinions, and higher overall earnings informativeness (Carcello &amp; Li, 2013).</li> </ul>	<ul style="list-style-type: none"> <li>- Mandatory disclosure of the engagement partner on the audit report was associated with higher audit fees (Carcello &amp; Li, 2013).</li> </ul>
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Audit fees were found 86 percent higher in the post-SOX report period prior to May 2005, following the introduction of AS2 (Raghunandan & Rama, 2006). This unintended consequence was identified and remedied by the PCAOB, as evidenced by the introduction of AS5, which noted a decrease in audit fees without necessarily degrading audit quality (Wang & Zhou, 2012). However, audit report lag increases from 10 to 15 days on average following the enactment of ICFR and audit documentation standards (DeFond, 2010). This reporting delay may affect information supply for investors.

#### *Auditor Independence*

The PCAOB is also concerned with mitigating conflicts of interest within the audit process. Conflicts of interest between management and auditors are suggested to be the main contributor to audit failure (Moore, et al., 2006; Gillan & Martin, 2007). In attempting to reduce the conflict of interest problem, the PCAOB prohibits audit firms from providing certain non-audit services to audited companies; requiring audit committee pre-approval of all audit and non-audit services, and; limiting engagement of audit partner to five years rather than every seven years. This process seeks to minimize the possibility that external factors such as auditor dependence on non-audit services fees does not violate auditor impartiality and judgement.

Pagano and Immordino (2007) developed a model to evaluate the effectiveness of auditing regulation based on a cost and benefit analysis. They suggest that prohibiting the joint provision of auditing and consulting services may be working to eliminate collusion. However, they mention that audit firms may struggle with the trade-off of costs and benefits of the audit and that the aforementioned provision may not be optimal in the presence of

economies scope. Therefore, due to loss of income from non-audit services and the requirement to increase audit quality, the economic consequence is the increase in audit fees (Knechel, 2016). Further, clients may lose the benefit of having non-audit services provided by an expert from one firm also providing the audit (Knechel & Sharma, 2012).

#### *Audit Documentation*

Audit documentation is critical in examining audit quality as it supports the auditor's findings, as well as assisting in the planning, performance, and supervision of the engagement. In acknowledging this, the PCAOB released Auditing Standard No. 3, Audit Documentation (AS 3). In 2015, this standard is reorganized to Auditing Standard No 1215, Audit Documentation. The PCAOB requires auditors to prepare greater detail of audit documentation within 45 days after the release of audit financial statements, and to be retained for a maximum of seven years. One of the substantial changes is the increase in documentation for the auditor's risk assessment (Piercey, 2011). Payne and Ramsey (2008) perform an experiment on the frequency and duration of auditors in preparing audit documentation in the form of summary memoranda and detailed documentation. They find that detailed documentation was associated with more extensive review of audit evidence, and hence lead to better error detection. Whilst this finding may be expected by the PCAOB, one experiment involving 138 auditors from two large audit firms and 76 accounting students, Piercey (2011) finds the audit risk assessment documentation requirement tended to be associated with more lenient auditor judgment and less quantitative risk assessment. This is because auditors tend to work with words qualitatively rather than numbers quantitatively. If these conditions apply, the audit documentation standards may present an unintended consequence, (Doty, 2015) that auditors may lose significant information in their analytical report.

#### *Engagement Partner Disclosure*

Another subject addressed in SOX is transparency in engagement partner information. PCAOB chairman, James R. Doty (2015) positioned transparency reform in regards to the partner and firm disclosure, further incentivising auditors to conscientiously increase the quality of the audit and provide reliable comfort to investors. Lambert et al., (2013) examine the impact of partner name disclosure to the individual partner's audit reputation; the impact of partner's reputation to the incentive structure of partner rotation, and; the impact of the

partner's rotation to the partner independence and eventually to the audit and financial reporting quality. The authors perform an experiment containing 380 individuals with investment experience and find investors have a lower propensity to invest in firms that shared an audit partner with a restating firm. This was compared to the firms that only shared a common audit firm, and the audit report modification language does not appear to alleviate this effect, as such indicating that disclosing audit partner on the audited financial report does matter. Further, they suggest that disclosing the name of the engagement partner on the audit report incentivizes the partner to maintain their reputation. This result may align with PCAOB expectations.

Carcello and Li (2013) examine the association of disclosure of the engagement partner on the audit report, audit quality, and audit fees. Even though their examination is based on UK companies' data stream, they believe that it may be relevant to PCAOB standards on mandatory disclosure of the engagement partner. This is due to the requirement of disclosure of the audit partner on the audited financial statement, which was instituted in the UK at the same time as the U.S. The study finds that mandatory disclosure of the engagement partner on the audit report within the UK is associated with reduced earnings management, more qualified opinions, and higher overall earnings information quality. However, the unintended consequence is mandatory disclosure of the engagement partner on the audit report which is also associated with higher audit fees.

### *Inspection*

PCAOB inspections focus on two aspects: firstly, examining audit firm procedures and, secondly, examining audit firm quality control over its audit process. Section 104 of SOX authorizes PCAOB inspection of registered audit firms to assess compliance with the Act (PCAOB, 2016). The inspection examines the compliance of audit firms to certain rules or laws, including General Accepted Auditing Standards (GAAS), PCAOB auditing standards, and other related laws and professional standards. The PCAOB has recruited highly qualified inspectors with extensive audit expertise. The Board has full authority to select registered audit firms and audit focus without collaboration from the inspected firms. PCAOB inspectors are authorized by law to access confidential documents and client information relevant to their inspection. This regulatory empowerment is argued to enhance PCAOB inspection capabilities in performing broader inspection duties and thus more effective in discovering audit deficiencies.

Audit firms subject to inspections must cooperate with the PCAOB and provide information via an interview or written response (PCAOB, 2012). The contents of the PCAOB's findings are articulated through a draft inspection report, with the audit firm able to respond to the findings within 30 days (PCAOB, 2012). After this, the Board may amend the draft or adopt it as final. Once the final inspection report has been issued, audit firms have 12 months to respond to and remediate any internal control defects (PCAOB, 2012). Should the audit firm fail to remediate the PCAOB identified weaknesses, the Board may make the findings public in a process designed to signal lesser audit quality to investors and audit clients.

Some issuer clients use non-U.S. audit firms, however, and the PCAOB has the discretion to inspect non-U.S. registered firms in the same manner as U.S. registered firms (SOX 2002). In 2015, 899 non-U.S. firms in total were inspected by the PCAOB (PCAOB, 2015). Inspections may be carried out by the Board individually, or in conjunction with the home country regulator, with the ability to rely on the inspection work already carried out by the home country regulator. The PCAOB creates formal cooperative arrangements with foreign audit regulators in this process, and is able to share information with the relevant authorities as established through the Dodd-Frank Act (2010). This process is vital to ensuring that issuer clients listed on U.S.-based markets, but audited by non-U.S. audit firms, are subject to the same level of audit quality mandated by the PCAOB.

Further, we note prior research regarding the information value of PCAOB inspections, the association with audit quality, and the overall effectiveness of PCAOB inspections. The summary of prior research of PCAOB inspection is presented in the Table 3.

### *Information Value*

SOX established the PCAOB to protect investors and advance the public interest in the preparation of informative, fair and independent audit reports (PCAOB, 2006). Although the board has responsibility with registration, standard setting, inspection, and enforcement, it is believed the inspection process is the primary vehicle to improve the quality of auditing practice (Carcello, et al., 2011). Prior to the PCAOB, the AICPA's peer review process was found to have a positive impact on market perception on audit quality (Hilary & Lennox 2005). Moreover, the number (and the type) of weaknesses identified in a firm's peer-review report could predict the likelihood of said firm receiving a malpractice claim as a proxy for audit

failure (Casterella, et al., 2009). However, the implementation of the PCAOB in 2003 created a new signal of audit quality to the market. The PCAOB’s overarching mission is to protect the interests of investors in the preparation of informative, accurate, and independent audit reports (PCAOB, 2016). An increase in investor confidence in response to the implementation of the PCAOB constitutes an intended consequence. Therefore, it is important to identify the market perception of the PCAOB inspection process and its relationship with perceived audit quality.

Table 3. Inspection Framework

Organizational Framework of PCAOB	Objective	Results	
		Intended	Unintended
PCAOB inspects registered audit firms annually and triennially.	<ul style="list-style-type: none"> <li>- Identifying issues related to audit quality of public companies and broker-dealers (PCAOB, 2016).</li> <li>- Inspection reports contribute valuable insights for investors and other users of financial statements (PCAOB, 2015)</li> <li>- Non-U.S. audit firms register with the PCAOB and are inspected for compliance with U.S. legal requirements (PCAOB, 2015)</li> </ul>	<p><i>Information value</i></p> <ul style="list-style-type: none"> <li>- High severity deficiencies are identified in PCAOB inspection reports and are factored into investor decision-making (Robertson &amp; Houston, 2010).</li> <li>- PCAOB inspection reports are informative and value-relevant in signaling audit quality to investors (Offermans &amp; Peek, 2011)) and client firms (Daugherty &amp; Tervo, 2010).</li> <li>- Triennial inspection reports distinguish the audit quality of inspected firms (Gunny &amp; Zhang, 2013).</li> <li>- Adverse inspection reports decrease perceived audit quality to market participants (Abbott, et al., 2013).</li> <li>- PCAOB access to foreign firms increases investor confidence in audit quality (Carcello, et al., 2014)</li> </ul>	<p><i>Information value</i></p> <ul style="list-style-type: none"> <li>- Audit clients have not perceived PCAOB inspection reports as being valuable for signaling audit quality (Lennox &amp; Pittman, 2010).</li> </ul>
	<ul style="list-style-type: none"> <li>- Inspection reports drive an increase in audit quality among registered firms (PCAOB, 2015).</li> </ul>	<p><i>Audit Quality</i></p> <ul style="list-style-type: none"> <li>- The audit quality is found to increase through a decrease in accrual-based earnings management of annual inspected firm’s clients (Carcello, et al., 2011).</li> <li>- Audit firms with PCAOB-identified audit deficiencies are more likely to issue a going concern opinion for financially distressed clients (avoid audit failure) (Gramling, et al., 2011).</li> <li>- PCAOB access to foreign firms increases the likelihood of issuing going concern opinion and reporting</li> </ul>	<p><i>Audit Quality</i></p> <ul style="list-style-type: none"> <li>- Smaller audit firms reported the negative consequences of PCAOB inspections such as: decreasing acceptance and retention of public company clients, increasing hours and billing on engagements, and decreasing ability to attract and retain audit personnel. (Daugherty &amp; Tervo, 2010).</li> <li>- The two-tier frequency system of PCAOB inspections may have also resulted in two-tier audit quality and audit fee systems for small and midsize audit firms (Tanyi &amp; Litt, 2016).</li> </ul>

		material weaknesses (Lamoreaux, 2016)	
	<ul style="list-style-type: none"> <li>- PCAOB inspections focus on areas of the audit that were ignored by the peer-review system, such as tone at the top and partner accountability (PCAOB, 2003).</li> </ul>	<p><i>The effectiveness of PCAOB inspection</i></p> <p>PCAOB inspections are more independent and quality-discerning than the peer-review program (Carcello, et.al., 2011; Anantharaman, 2012; Gunny &amp; Zhang, 2013).</p>	<p><i>The effectiveness of PCAOB inspection</i></p> <ul style="list-style-type: none"> <li>- The inspection process might not be effective due to the reduction in the inspector's technical skills (competence) as they were auditors (Glover, et al., 2009).</li> <li>- The number of audit deficiencies show an insignificant decrease (Elnaby, et al., 2013) and the audit deficiencies are recurring in every inspection report (Church &amp; Shefchik, 2011)).</li> <li>- The PCAOB inspections may not be surprise and hence audit firms may provide special attention to issuers that are likely targets for inspection or by stylizing working papers to appease inspectors (Church &amp; Shefchik, 2011).</li> </ul>

A study of 142 participants from investment clubs, graduate business school, and civic clubs found investors anticipate greater improvement in the quality of future audit opinions when the PCAOB identified high-severity deficiencies (Robertson & Houston 2010). Further, the same cohort concluded greater credibility in audit reports when audit firms conceded deficiencies, particularly from smaller audit firms (Robertson & Houston, 2010). Offermans and Peek (2011) examine the informational content of PCAOB inspection reports through observing the size-adjusted stock returns of clients audited by inspected audit firms around the inspection report stamp dates. The study of 224 first-round and 134 second-round inspection reports between January 2005 and March 2010 found the first-round reports elicit a market response of 14 percent of the average size response to earnings announcements in the same period, and the second-round report evokes a 29 percent response (Offermans & Peek, 2011). Gunny and Zhang (2012) find the clients of triennially inspected auditors (less than 100 issuer clients) are associated with lower audit quality if the reports are seriously deficient, which suggests that triennially inspection reports distinguish the audit quality of inspected firms. This provides evidence that PCAOB inspections are both informative and value relevant to investors, conveying a reliable signal of audit quality.

The implementation of the PCAOB inspection process has also impacted the audit market through the signal of audit quality to issuer client firms. This has been found in Daugherty, et al. (2011) whereby involuntary client losses show a positive relationship with PCAOB deficiency reports in triennially inspected firms. Moreover, client firms are more likely to engage another triennially inspected audit firm that possesses a clean, or no, inspection report (Daugherty, et

al., 2011). These findings also included a positive relationship between deficiency reports and voluntary client losses, indicating the post-inspection cost of PCAOB compliance outweighs the benefits of auditing SEC-listed companies (Daugherty, et al., 2011). The results also find that deficiencies decrease from first-time to second-time inspection for triennially inspected firms (Daugherty, et al., 2011). Abbott, et al. (2013) further argue that PCAOB inspections provide important audit quality signals within the audit market, particularly between non-big 4/non-national firms. Adverse inspection findings provide a market shock and decrease the perceived audit quality within the market (Abbott, et al., 2013). To this extent, the market places value in the independence of PCAOB inspection reports, and provides a publicly available indicator of audit quality (Abbott, et al., 2013).

The impact of PCAOB inspections on the perception of audit quality and international firms is similar to that of U.S.-based audit firms. Multiple PCAOB releases from August 2009 to May 2010 that cited country-specific non-compliance with PCAOB inspections resulted in negative abnormal market reactions to companies audited by foreign audit firms (Carcello, et al., 2014). This was particularly the case with SEC-listed companies audited by Chinese audit firms (Carcello, et al., 2014). In contrast, a PCAOB release in January 2011 disclosing the UK would allow PCAOB inspections received a positive abnormal market reaction (Carcello, et al., 2014). These findings indicate investors perceive greater audit quality when the PCAOB is granted access to inspect foreign audit firms.

#### *Audit Quality*

Given that approximately half of the PCAOB's annual budget is allocated to the inspection process, most research has focused on testing whether the PCAOB inspection process has improved audit quality. PCAOB inspections are reporting fewer deficiencies which may indicate the process is improving audit quality (Landis, et al., 2011). Discretionary accruals, likelihood of financial report restatements, and propensity to issue a going concern opinion have previously been used as proxies to measure audit quality (Carcello, et al., 2011; Fargher, et al., 2017; Gunny & Zhang, 2013). Carcello, et al. (2011) find a significant reduction in discretionary accruals in the year following the first PCAOB inspection and a further reduction in discretionary accruals in the year following the second PCAOB inspection. Gramling, et al. (2011) find that firms with PCAOB deficiencies were more likely to issue going-concern



opinions for financially distressed clients subsequent to their PCAOB inspection than prior to their inspection.

Similarly, Lamoreaux (2016) finds that auditors in jurisdictions allowing PCAOB inspections are more likely to report GC opinions and material weaknesses relative to auditors in jurisdictions barring PCAOB inspections. Moreover, earnings management decreases when foreign audit firms are inspected by the PCAOB, with the overall quality of reporting being stronger for audit firms being at a higher risk of inspection (Lamoreaux, 2016). To this extent, actual audit quality increases for SEC-listed companies that are audited by foreign audit firms that allow PCAOB inspection access. This is particularly relevant, as high-risk SEC-listed companies experience the greatest relationship with PCAOB access. Further, Bishop, et al. (2013) find that over half of all international audit firms that allowed PCAOB access identified audit deficiencies, with two-thirds citing quality control defects. These findings were particularly relevant to smaller firms that were more likely to exhibit deficiencies, perhaps reflecting an over-extension into the audit market.

Foreign audit firms that were big-4 affiliated showed fewer deficiencies comparative to other firms (Bishop, et al., 2013). Most notably however, there was no decrease from first inspection deficiencies to second inspection deficiencies, reflecting the difficulties international audit firms face in attempting to appease two sets of accounting standards; those in the firm's home country, and also the PCAOB's standards (Bishop, et al., 2013). These findings suggest the PCAOB inspection process results in an improvement in audit quality and thus reflects an intended consequence of the PCAOB inspection regime. One sample of audit firms showed the industry viewed the PCAOB as an effective oversight board, and believed PCAOB inspectors to be knowledgeable and competent (Newman & Oliverio, 2010).

The PCAOB inspection process has also presented some unintended consequences. For instance, whilst there has been a downward linear trend in the total number of audit deficiencies, the decrease has been insignificant in nature (Elnaby, et al., 2013; Church & Shefchik, 2011). Moreover, most of the total audit deficiencies involve a common, recurring deficiency (Elnaby, et al., 2013; Church & Shefchik, 2011). This indicates the same audit problems are failing to be addressed, casting doubt on the extent that audit quality is increasing. Further, as PCAOB inspections are risk-based through targeting hazardous areas of the engagements, the intended focus is on the most important issues and to simplify the audit

procedures. However, this has the potential to create defensive box-ticking auditing, as audit firms may become more adept at dealing with the PCAOB inspection process by providing special attention to issuers that are likely targets for inspection or by stylizing working papers to appease inspectors (Church & Shefchik, 2011). The transition from self-regulation to PCAOB inspection has decreased the acceptance and retention of public company clients for smaller audit firms, as well as increasing hours and billing on engagements, and decreasing ability to attract and retain audit (Daugherty & Tervo, 2010).

### *The Effectiveness of PCAOB Inspections*

Prior to the enactment of SOX, auditor oversight was conducted through a peer review system, a process argued to be deficient in credibility and unable to deliver independent audit reports (Hilary & Lennox, 2005). Under the peer review system, audit firms were audited every three years under the direction of the AICPA, regardless of the size of the audit firm (Palmrose, 2006). On the contrary, the PCAOB is an independent non-governmental body oversight by SEC funded overwhelmingly through public and investment companies that benefit from independent audits (Carmichael, 2004). PCAOB inspections are risk-based and target the hazardous areas of the engagement (Church & Shefchik, 2011), a process deemed to be more independent and quality-discerning than the peer review program (Carcello, et al., 2011; Anantharaman, 2012; Gunny & Zhang, 2013). Inspection rates also depend on the size and reach of the audit firm, with large audit firms inspected more frequently, placing greater emphasis on audit quality and affording considerable opportunity for continuous improvement through learning and remediation of audit deficiencies. This is essential when considering large audit firms provide audit reports for 99 percent of U.S.-based issuer market capitalisation (Church & Shefchik, 2011).

Whilst Gunny and Zhang (2013) suggest annual PCAOB inspections are not a reliable signal of audit quality, Tanyi and Litt (2016) provide evidence that differences in PCAOB inspection frequency distinguishes actual audit quality. This creates an environment that audit clients of annually inspected audit firms may receive higher quality audits, but may also pay significantly higher audit fees compared to audit clients of triennially inspected audit firms. This is said to establish a two-tier audit quality and audit fee system for small and midsize audit firms. Ragothaman (2012) finds that PCAOB inspection reports discover higher rates of deficiencies than the AICPA's peer review system. However, some argue inadequate expertise

is present within the organisation to effectively conduct risk-based inspections (Glover, et al., 2009). This speculated decrease in competence may present an unintended consequence, that is, a trade-off for independence. One concern is the PCAOB inspectors' technical knowledge can become outdated all too quickly (Church & Shefchik, 2011). Further, other research indicates that PCAOB reports were identified as ineffective instruments for signaling audit quality, and that there existed an anecdotal bias on behalf of investors through focusing on the number of deficiencies, as opposed to their statistical context (Wainberg, et al., 2013).

### *Enforcement*

Under Section 105 of SOX, the PCAOB has the ability to investigate and discipline registered audit firms for non-compliance with the Act (PCAOB, 2016). The PCAOB's effectiveness in protecting investors and increasing audit quality is contingent on its ability to sanction underperforming auditors and audit firms. The Board may also take disciplinary action against individual auditors who threaten the Board's regulatory processes (PCAOB, 2016). The enforcement of sanctions creates an incentive for auditors and audit firms to comply with the requirements set by SOX and the PCAOB. The sanctions imposed by the Board on registered audit firms or individual auditors include censures, monetary penalties, or revocation of registration (PCAOB, 2016). The PCAOB is required by the Act to not disclose details of disciplinary proceedings until completed, and in 2015, the Board made public 44 settled disciplinary orders exposing sanctions on auditors (PCAOB, 2015). We summary selected studies on PCAOB enforcement as presented in the Table 4.

*Table 4. Enforcement and Sanctions*

Organizational Framework of PCAOB	Objective	Results	
		Intended	Unintended
Enforcement and Sanctions:  - SOX authorizes the PCAOB to impose sanctions and disciplines individual auditors or firms of public companies and broker-dealers for violations of laws, regulations and professional standards.	- Change in auditor incentives, particularly in the form of higher regulatory risk (Lamoreaux, 2016)	- Sanctions imposed on audit firms that showed deficiencies related to lack of due professional care on the part of reviewer, inaccurate financial information, and lack of conformity with GAAP (Messier, et al., 2010)	- Deloitte experienced a greater number of auditor staff changes and dismissals (The auditor switches from Big 4 to non-Big 4) in the 13-month period surrounding the disclosure (Roybark, 2013).  - Smaller audit firms taking on riskier clients that dismissed big-4 auditor (Roybark, 2013)

To this extent, the intended consequence of the PCAOB's enforcement program takes the form of sanctions being placed on underperforming auditors and audit firms. Messier, et al. (2010) identify 28 cases involving sanctions against auditors and audit firms since 1993, with most containing deficiencies relating to lack of professional due care, inaccurate financial information, and breaches of conformity with GAAP. In 25 out of 28 cases, the audit engagement partner was held responsible and sanctioned by the SEC, signaling the intention of the regulator to hold auditors and audit firms to account from the top down (Messier, et al., 2010). Moreover, in half of the cases, the auditor was barred from practicing before the SEC or PCAOB for three years or more (Messier, et al., 2010).

Prior to October 2011, PCAOB disclosure regarding quality control criticisms of big-4 firms remained non-public. However, the non-compliance of Deloitte and Touche LLP (Deloitte) in addressing the internal control criticisms to the Board's satisfaction resulted in a public release of the Board's inspection findings (Roybark, 2013). Roybark (2013) notes the findings cast significant doubt as to whether Deloitte had performed adequately in satisfying its social responsibility as an audit firm. She noted that during the 13-month period following the public release, Deloitte lost more clients than any other big-4 firm during the same period, with 82 percent of client losses being involuntary, many of which were long-standing clients.

Whilst the PCAOB fully intended for its enforcement regime to signal deficient audit quality to client firms, the standing of Deloitte following the public release decreased dramatically. Moreover, 30 percent of total auditor changes during the 13-month period were retained by non-Big-4 firms, indicating that smaller firms assumed the higher-risk audit engagements (Roybark, 2013). Through its release, the PCAOB may have intended an issuer market-led realignment of services towards audit firms that complied with PCAOB standards, however, its intention could not have been for smaller firms with less resources and experience taking on higher-risk audits. To this extent, the enforcement sanctions against Deloitte and the subsequent abandonment of many clients, particularly higher-risk audits, to smaller auditing firms may not increase the audit quality and protect investors as the process is designed to do. Early research into the PCAOB enforcement program confirms this, with disciplined firms generally smaller in size, with more issuer clients, and a greater propensity for those issuer clients to be financially unhealthy and of higher-risk (Gilbertson & Herron, 2009). Out of a total 184 disciplinary orders from May 24, 2005 to 20 December, 2016, 34 were issued to non-U.S. audit firms (PCAOB, 2017).

Dowling, et al (2015) utilized the slippery-slope framework in reviewing audit partner perception towards the regulator's exercise of power, and its impact on audit quality. The sample of audit partners perceived the enforcement style of the regulator had recently repositioned from a collaborative to coercive approach. This regulatory style incentivizes audit partners to adjust the audit process to manage inspection risk in anticipation of coercive enforcement. The sample of audit partners believe this enforcement approach encourages the prioritisation of compliance over audit quality, particularly through the over-reliance on checklists at the expense of the idiosyncratic requirements of individual clients. Whilst the perception of audit quality has increased following the implementation of the PCAOB (Offermans & Peek, 2011; Daugherty, et al., 2011; Abbott, et al., 2013), as the regulator's benchmark of audit quality shifts from inspection to inspection and investors are continually told auditors are not improving, investors may continually lose confidence in the perception of auditor performance (Dowling, et al., 2015).

#### **IV. Discussion of Potential Future Research in Audit Oversight System**

Whilst the PCAOB's four primary functions of registration, standard setting, inspection, and enforcement have been examined in prior studies, we seek to add to the growing body of literature through identifying areas for future research. Based on our analysis on prior studies on the PCAOB, we note that some studies have differing conclusions on the implementation of the PCAOB on audit quality. Prior studies also present contrary arguments regarding the independence and expertise of the PCAOB. Therefore, we outline PCAOB research areas that warrant further consideration as the public audit oversight system continues to develop in the U.S.

##### *Registration*

We note studies with archival and interview research (Read, et al., 2004; DeFond & Lennox, 2011; Fargher, et al., 2017) that examine the registration conditions with the PCAOB and its relationship with small firms exiting the market. Research from DeFond and Lennox (2011) and Fargher, et al., (2017) reach difference conclusions of the audit quality of exiting firms from 2001 to 2008. However, the number of firms registered with the PCAOB continues to increase annually. The small exiting firms may be re-registered with the PCAOB in later years. Hence, there is a need to study smaller firms exiting the market for the early period of

SOX and subsequent re-registration with the PCAOB. One impartial subsample for future research is international auditors who may have initially exited the market for U.S. listed clients but re-registered years later.

According to interviews conducted by Read, et al., (2004) with audit partners of exiting firms, registration with the PCAOB is expected to increase the perception of greater audit quality. However, there is no existing research that shows whether registration with the PCAOB creates an audit quality signal for the audit of non-public companies. Limitation of data regarding non-public companies may be the significant problem for this study.

Further, continuing jurisdictional issues may be a fruitful research area in examining the PCAOB's registration framework. The number of non-U.S. registered firms is significant and potentially growing faster than U.S. audit firms in the future. PCAOB registration rules set a different treatment for auditors within various jurisdictions. This means an applicant may withhold information from its application for registration when submission of such information would cause the applicant to violate a non-U.S. law. This could result in information being withheld by non-U.S. firms and can impact the effectiveness of the oversight system.

#### *Standard setting*

One of the implications of the PCAOB in its role as standard setter is the increase in compliance cost to audit firms that operate both in the U.S. and globally. The more standards developed and adopted by the PCAOB results in greater complications when conducting the audit within the audit firm's home country and the U.S. That said, we do not present evidence regarding potential overlap between auditing standards applicable for U.S. listed companies and for each auditing standard in different jurisdictions. This warrants further research on the compliance cost of diverging standards within the U.S. and certain jurisdictions.

The PCAOB has been criticized for deficient expertise in its standard setting role (Glover, et al., 2009). This has led to unproductive standards setting and loss of U.S. leadership internationally. The issue is whether the PCAOB standard setting role can provide reliable and relevant information. There is currently a gap in the studies regarding the current development of PCAOB auditing standards such as ICFR, independence rule, audit documentation and engagement partner disclosure.

## *Inspection*

Whilst the AICPA's peer review program delivered a positive impact on the market perception of audit quality, the process did not guarantee credibility (Hilary & Lennox, 2005). Following large scale corporate collapses in the early 2000s, U.S. regulators were compelled to institute public oversight of auditors through the PCAOB. The Board's inspection process continues to be its primary agent in ensuring audit quality, in an effort to protect investors and advance the public interest. Investors have reacted positively to the implementation of the PCAOB's inspection program and the perception of audit quality it conveys (Robertson & Houston, 2010; Offermans & Peek, 2011; Gunny & Zhang, 2013). A growing body of literature continues to affirm the validity of the perception of increased audit quality in a post-PCAOB inspection environment (Landis, et al., 2011; Carcello, et al., 2011; Gramling, et al., 2011; Lamoreaux, 2016). To this extent, the PCAOB inspection regime has delivered more independent and credible oversight on an industry that was marred by scandal just under two decades ago.

However, despite an increase in independent inspections and unprecedented resources at its disposal, the question remains whether the PCAOB has fulfilled its goal of providing effective oversight on the audit industry. Whilst some studies have identified a decrease in deficiencies from first to second report for inspected firms (Daugherty, et al., 2011), the downward trend has been insignificant, with the same types of deficiencies recurring (Elnaby, et al., 2013; Church & Shefnic, 2011). Further, annually inspected firms never attain clean inspection reports (Gunny & Zhang, 2013). Overall, this indicates that audit firms are perennially failing to identify key audit deficiencies within their own audit reports. Precipitated by SOX, the current regulatory environment increases rule-making and establishes a process that delivers a detection and correction approach but does very little to prevent the occurrence of deficiencies (Ball, 2009). The PCAOB has created a market for identifying deficiencies, particularly through its risk-based inspection system. With the PCAOB continually finding audit deficiencies, particularly in annually inspected audit firms, it is hard to discern at what rate audit quality is increasing. Investors that are repeatedly drawn to inspection reports identifying auditor weaknesses may decrease their perception of audit quality over time.

Whilst proponents of the PCAOB point to a decrease in overall audit deficiencies (Daugherty, et al., 2011), albeit at an insignificant rate for annually inspected firms (Elnaby, et al., 2013; Church & Shefchik, 2011), little is understood about audit firm strategies to mitigate

inspection risk, particularly via defensive box-ticking. As audit firms become more adept in managing PCAOB inspections, they may undertake processes that avoid deficiency reports, but do little to increase audit quality. Audit firms are more likely to increase their hours on audit engagements as they know they will be inspected. This increases the cost of the audit to the issuer client (Daugherty & Tervo, 2010), as well as drawing out the delivery of the audit (DeFond M. L., 2010). The annual inspection rates of larger audit firms may also create a two-tier audit quality market (Tanyi & Litt, 2016). Constant criticism and inspection risk may also decrease attraction and retention rates of high-quality individuals within the audit industry. Further research is warranted to understand audit firm responses to inspections, particularly the extent to which audit firms engage in defensive auditing through box-ticking and otherwise deficient auditing techniques to avoid receiving negative inspection reports.

Under section 106 of SOX, the PCAOB has the power to inspect non-U.S. audit firms providing audit services for SEC-listed companies, in the same way it inspects U.S.-based audit firms. Early resistance from some foreign jurisdictions brought about PCAOB Rule 4012, whereby the Board's inspection of a foreign firm is done in collaboration with the home-country regulator (Gray & Matelis, 2011). Moreover, in 2007, the Board extended the scope of Rule 4012 to allow for "full reliance" on the work already completed by the home-country auditor. This affords the Board discretion on how to allocate finite resources towards riskier jurisdictions. However, the full reliance principle does not translate to full deference (Gray & Matelis, 2011). The implementation of the Dodd-Frank Act (2010) further aided this process, in that the PCAOB could share information with the foreign jurisdiction's regulator.

Despite recent success in gaining access to prominent jurisdictions from 2010 onwards, the resistance from China in submitting to the PCAOB inspection process over sovereignty concerns has "left a gaping hole in investor protection" (Doty 2011). Alleged accounting irregularities by U.S.-listed Chinese firms has resulted in investor losses of up to \$70 billion in recent years (He et al., 2012; Darrrough et al., 2012 in Carcello, et al., 2014). The findings in Carcello, et al. (2014) suggest Chinese firms are less likely to select annually-inspected U.S. audit firms than other foreign companies barring PCAOB access. Further, China's prohibition of PCAOB inspections suggests Chinese companies may have chosen auditors subject to lower levels of scrutiny, and therefore, lower audit quality (Carcello, et al., 2014). As a consequence of this, it was found that Chinese companies experienced greater negative stock price



reactions to PCAOB disclosures pertaining to its resistance to inspection than other foreign companies whose home-countries also barred PCAOB inspections (Carcello, et al., 2014).

The Chinese oversight authority for auditors, the Chinese Securities Regulatory Commission (CSRC), has been resolute in its insistence the PCAOB fully rely on the work of the CSRC (Gray & Matelis, 2011). However, so far the PCAOB has been barred access to gather the assurance it needs to conclude the CSRC is capable of ensuring Chinese-based audit firms adhere to PCAOB-issued standards. Recent developments in PCAOB-CSRC relations include the Sino-U.S. Symposium on Audit Oversight in 2011, whereby officials presented on their respective audit oversight and inspection systems and procedures, as well as collaborating on how to strengthen cooperation on cross-border audit oversight (PCAOB 2011). These discussions proved beneficial, with a Memorandum of Understanding on Enforcement Cooperation being signed between the PCAOB and the CSRC in 2013, allowing for cooperation in providing each authority with the ability to exchange audit documents pertaining to investigations in each countries' respective jurisdictions (PCAOB 2013). However, the PCAOB remains unable to inspect Chinese audit firms registered with the PCAOB that audit SEC-listed Chinese companies, even on a joint-inspection basis. Whilst the PCAOB has signaled its continuing desire to inspect Chinese audit firms on a permanent basis, it concedes more practical options may be necessary, however it is unclear what this may look like (PCAOB, 2016). Researchers may wish to undertake new study on audit quality in China, to gain a greater understanding of the trade-offs the PCAOB faces in seeking to protect investors in the U.S. The benefits of this research would be specific to new strategies the PCAOB may wish to implement in lieu of gaining complete access to the Chinese jurisdiction.

### *Enforcement*

The PCAOB's intention to penalize audit firms that do not comply with auditing standards is evidenced by a string of settled disciplinary orders<sup>5</sup> (PCAOB 2015). Messier, et al. (2010) note the regulator's objective of setting the tone at the top by holding audit engagement partners responsible for audit deficiencies. This enforcement process incentivizes audit firms to increase the quality of their audits or face disciplinary orders from the regulator, and suffer the market consequences as a consequence of publicly available deficiency reports. This was illustrated through the 2011 release of Deloitte's inspection report, and the exodus of issuer

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<sup>5</sup> <https://pcaobus.org/Enforcement/Decisions/Pages/default.aspx>

clients from the firm seeking to engage PCAOB-identified higher quality auditors. However, this process resulted in less resourced smaller firms retaining riskier issuer clients, less equipped to identify risks within the audit (Roybark, 2013). This may have led to a decrease in audit quality for higher-risk issuer clients. Future research is warranted to greater understand how audit firms view enforcement actions by the PCAOB, and how audit firms weigh the costs and benefits of PCAOB disciplinary orders.

## **V. Conclusion**

The collective market failures of high profile corporations (Enron, WorldCom, Waste Management), as well as auditing failures (Arthur Andersen), precipitated the introduction of SOX, mandating the public oversight of the auditing profession via the PCAOB. This paper has sought to build on the existing literature of the PCAOB through categorising the intended and unintended consequences of the PCAOB's registration, standard setting, inspection, and enforcement functions. Our paper first documents the rapid increase of the PCAOB's budget and staffing requirements, as well as its growing influence on the audit profession both within the U.S. and internationally.

We identify and summarize the selected studies on the PCAOB with respect to the registration, standard setting, inspection, and enforcement functions of the PCAOB. For the registration process, we observe different conclusions of audit quality for small audit firms exiting the market following the implementation of SOX, and higher instances of mergers and acquisitions of small audit firms. Regarding standard setting, we note that whilst the PCAOB fosters an independent environment for the issuance and adoption of auditing standards, this process may prove unproductive and has led to the U.S. losing its incumbency as the standard setting leader. The PCAOB's inspection process, often described as the Board's main vehicle for improving audit quality, has led to increases in both perceived and actual audit quality and overall improvement on the AICPA's peer review program. With respect to enforcement, research has found PCAOB disciplinary actions have created a market signal of audit quality, further incentivising audit firms to avoid enforcement actions through increasing audit quality.

In understanding the intended and unintended consequences of the implementation of the PCAOB, researchers are better equipped in discovering the inefficiencies of this government-mandated oversight body and recommend areas for improvement. Given the

rapid increase in the size of the PCAOB since its inception, further guidance pertaining to the achievement of the PCAOB's mission at lower cost should be warmly welcomed. We understand relatively little about the current development of registration activity of small audit firms, and their propensity to register and de-register in the post-SOX audit environment. Research on the compliance cost of diverging standards for international firms also operating within the U.S. may help to reduce overlapping auditing standards. Whilst PCAOB inspections have increased perceived and actual audit quality, further studies that depict how audit firms manage inspection risk, particularly through defensive box-ticking may be relevant for regulators to evaluate the changes in auditor behaviour.

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**Appendix:****Table I Number of Registered Firms**

Year	Registered audit firms	US registered audit firms	Non-US registered audit firms
2003	735	735	0
2004	1423	893	530
2005	1591	945	646
2006	1738	986	752
2007	1828	985	843
2008	1874	983	891
2009	2349	1413	936
2010	2397	1503	894
2011	2388	1480	908
2012	2363	1452	911
2013	2319	1406	913
2014	2201	1300	901
2015	2107	1208	899

**Table II Operating Revenues**

Year	Total net operating revenue	Issuer accounting support fee	Broker-dealer accounting support fee	Registration and annual fees paid by PCAOB registered audit firms
2003	\$ 54,890,030	\$52,851,530		\$2,038,500
2004	\$101,397,100	\$101,093,100		\$304,000
2005	\$136,071,200	\$136,005,200		\$66,000
2006	\$109,328,350	\$109,278,600		\$49,750
2007	\$122,324,250	\$122,285,500		\$38,750
2008	\$134,525,200	\$134,498,200		\$27,000
2009	\$157,302,040	\$157,133,040		\$169,000
2010	\$179,684,620	\$177,986,370		\$1,698,250
2011	\$203,754,862	\$187,704,262	\$14,365,600	\$1,685,000
2012	\$216,548,737	\$196,701,737	\$18,208,000	\$1,639,000
2013	\$235,539,623	\$207,463,742	\$26,460,881	\$1,615,000
2014	\$253,635,677	\$225,437,058	\$26,588,119	\$1,610,500
2015	\$228,107,200	\$199,103,800	\$27,444,900	\$1,558,500

**Table III Number of Staff**

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Staff	118	260	450	462	475	481	567	600	690	766	805	810	851



**Table IV Number of inspected firms by year**

Year	US annually inspected firms inspected this year	Non-US annually inspected firms inspected this year	Us triennially inspected firms inspected this year	Non-US triennially inspected firms inspected this year	Examined portions of audits performed	Firms audit brokers & dealers inspected this year	Audits of brokers and dealers inspected
2004	8	0	91	0			
2005	8	1	257	15			
2006	8	1	149	14			
2007	9	1	179	47			
2008	11	1	194	49			
2009	10	0	195	82			
2010	9	0	181	64	950		
2011	10	0	161	42	825		
2012	9	0	167	77	910		
2013	9	0	166	53	865	60	90
2014	9	0	153	57	780	66	118
2015	10	0	142	63	810	75	115

**Table V The operating expense**

Year	Total operating expenses	Registration and inspections expense	Enforcement expense	Standard setting expense	Research and analysis expense	Board and related activities expense	Supporting activities expense
2003	\$29,424,415	\$10,242,309	\$152,582	\$1,653,659	\$0	\$5,326,412	\$12,049,453
2004	\$70,951,182	\$30,896,018	\$1,901,298	\$3,636,440	\$1,081,382	\$6,874,092	\$26,561,952
2005	\$108,048,244	\$48,580,410	\$5,044,595	\$4,038,929	\$5,327,626	\$6,954,959	\$38,101,725
2006	\$126,830,280	\$63,029,855	\$7,287,041	\$3,892,260	\$6,887,292	\$7,377,712	\$38,356,120
2007	\$130,612,849	\$65,664,709	\$9,066,427	\$4,211,457	\$7,450,357	\$9,640,540	\$34,579,359
2008	\$133,760,138	\$69,651,602	\$9,859,889	\$4,770,886	\$7,199,635	\$9,082,752	\$33,195,374
2009	\$148,916,047	\$77,289,978	\$13,101,328	\$5,908,451	\$8,073,244	\$8,133,869	\$36,409,177
2010	\$167,430,692	\$90,661,945	\$15,613,605	\$7,191,839	\$9,056,129	\$7,152,514	\$37,754,660
2011	\$190,034,625	\$103,339,096	\$17,877,680	\$7,091,446	\$10,131,129	\$9,677,024	\$41,918,250
2012	\$217,684,975	\$126,417,664	\$19,115,365	\$8,410,958	\$9,974,617	\$10,227,082	\$43,539,289
2013	\$223,456,124	\$131,694,644	\$19,995,478	\$8,510,597	\$9,685,092	\$10,253,713	\$43,316,600
2014	\$234,398,664	\$135,669,903	\$20,176,179	\$9,383,053	\$11,773,881	\$10,767,236	\$46,628,412
2015	\$250,108,331	\$141,786,231	\$22,098,181	\$9,458,456	\$14,878,759	\$11,440,972	\$50,445,732