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Auditor Independence: Insights from Thailand

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Abstract

In recent years, the public places the concern over the non-audit service (NAS) provided by auditors that may eliminate the auditor's independence and audit performance accordingly. Hence, this research is motivated by such a concern and consequences of the reforming of the Code of Ethics regarding the auditor independence. This study aims to investigate whether the auditor independence proxied by the non-audit service fees affects audit quality. Using financial accounting data of Thai listed companies spanning over 2013-2021, the results indicate that non-audit service fees do not have an effect on audit quality. The findings also indicate that after the revision of the Code of Ethics for Professional Accountants with respect to the auditor independences, the audit quality has not improved statistically. The study further conducted robust tests by using alternative measurements to capture the auditor independence; non-legally set per time of the audit rotation, abnormal audit fees, and the proportion of non-audit service fees to total fees, regress on audit quality. Results from additional tests show that abnormal audit fees do not affect the audit quality; the voluntary ratio reduces audit quality while abnormal audit fees do not affect the audit quality. Interestingly, the proportion of non-audit service fees to total fees improves audit quality significantly. The study contributes to literature and practitioners in multiple ways. First, findings point out that non-audit services may not be a threat to the auditor independence but a knowledge spillover between audit and non-audit increases an audit effectiveness and performance accordingly. That is, the higher proportion of non-audit services fees to total fees, the better audit quality. Second, findings from this research could assist regulators and investors to govern and monitor listed firms that involve a non-legally set period of time of the audit rotation.

Keywords: Auditor independence, Non-Audit Service Fees, Audit Rotation, Audit Quality

1. INTRODUCTION

A number of large corporate failures, that have been reported since 2000, has brought about public concerns regarding the auditor independence issues. Regulators raised the issue of “what goes wrong when accounting firms become consultants" (Edward Ketz, 2020). This issue has led accounting professional bodies to reform the Code of Professional conduct requiring the auditors to maintain the independence in fact and appearance (Lisic, 2014). As a result, auditors are prohibited from providing various types of non-audit services, the so – called black list) to avoid the auditor independence compromise (i.e. services linked to the financial and investment strategy, and services relating to the advisory services to audited entities etc.) (Bussels, 2016). Inconsistent with the mentioned concern, recent empirical evidence points out that the provision of non-audit services (NAS) provided by audit firms to the audit clients is a way to gain accumulative knowledge of the background of audit clients (Garcia-Blandon, Argiles-Bosch, Ravenda, & Castillo-Merino, 2021). A widespread belief that NAS could impair the auditor independence and audit quality accordingly is an endless debate. This, therefore, motivates us to provide further evidence on this matter in the Thai market context where the reforming of the auditor independence came into effect after the US and other developed markets.

Aforementioned, compared to the US audit market, Thailand’s audit industry is more oligopoly. The ratio of listed companies to registered audit firms is about 25.6 for Thailand which is relatively lower than that for the US and Germany. Besides, prior studies indicate that in emerging markets where family control oriented could lower audit

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quality through the audit independence impairment (Darmadi, 2016). That is, the lower ratio of listed companies to approved audit firms could also harm the implementation of audit rotation causing the decrease of audit independence. Since the Thai market is unique in terms of being oligopoly, family control oriented, and the auditor independence reforming, the Thai audit market is susceptible to re-investigate for further and alternative implications on the independence of the auditor affecting audit quality.

Aiming to provide insights about alternative implications on NAS, this study examines whether the NAS potentially affects the audit quality though the impairment of the auditor independence. We obtained NAS information from annual reports disclosed by Thai listed companies over the period 2013 to 2021. This study employed the performance matched discretionary accrual model developed by Jones (2005) to indirectly capture the audit quality. This study further examines whether the post-period of the reforming of the Code of Professional Conduct highlighted on the auditor independence improves the audit quality. Although the Code of Professional Conduct was reformed, the Wirecard scandal was reported to be involved with the auditor independence issue and a flawed audit (Olaf Storbeck, 2021). Hence, whether NAS impairs the audit quality, and whether the revision of the Code of Professional Conduct enhances the audit quality are still worth to be re-investigated.

Establishing multiple regression models to test hypotheses, results depict that NAS does not significantly affect audit quality. We then performed additional tests using alternative measurements to capture the auditor independence; abnormal audit fees (*ABAFEE*), the voluntary audit partner rotation (*ROTATE*), and the proportion of NAS to total professional service fees (*NASRATIO*). The results obtained from the additional tests demonstrate that *ABAFEE* is also insignificantly associated with audit quality. Meanwhile, *ROTATE* has a significant negative relationship with the discretionary accruals suggesting that audit quality tends to reduce when audit clients are involved with the event of voluntary audit partner rotation. Additional test results further indicate that NASRATIO has a negative relationship with the discretionary accruals. This implies that the higher level of non-audit service performed by audit firms to audit clients lead to the better audit quality which is consistent with the notion that NAS represents the knowledge spillovers that can enhance the auditor's understanding of die client and its risks (Hay, Knechel, & Li, 2006) and hence improves the audit performance and audit quality (Chu & Hsu, 2018).

Even though there is mounting evidence on NAS and audit quality, this study extends from previous evidence in many perspectives. First, this research was conducted out of the US, EU, and other developed market-based data due to the awareness of the different regulatory enforcements (i.e. Bell, Causholli, & Knechel, 2015; Lim & Tan, 2008; Meuwissen & Quick, 2019 etc.). Second, although much of the research into NAS has been studied in emerging market contexts (i.e. Desoky & Khasharmeh, 2018; Nguyen, Kend, & Luong, 2023 etc.), this study was established in Thai context where the reformed audit fees and non-audit fees disclosure requirements for strengthening the auditor independence and audit quality is regarded as fully adopted. That is, the results could be diversified. Third, this study extends prior research (i.e. Bell, Causholli, & Knechel, 2015; Hay, Knechel, & Li, 2006; Kinney, Palmrose, & Scholz, 2004 etc.) by incorporating audit partner level data into the analyses as an alternative measurement for the auditor independence (The world bank group, 2019).

This study contributes to literature and professional bodies as well as the investors in the following ways. First, findings enrich the literature by documenting that non-audit services may not significantly diminish the audit quality through the impairment of the auditor independence, instead providing non-audit services could enhance the auditors' accumulative knowledge regarding engagement clients. That is, the higher proportion of non-audit services fees to total fees, the better audit quality. Second, findings from this research could assist regulators and investors to govern and closely monitor listed firms that involve a non-legally set period of time of the audit rotation because it involves the reduction of the audit quality. For example, the regulators could use the result from this study to set the proper ratio of non-audit service to total professional fees to enhance the auditor independence. This study further provides the evidence useful information about the factor affecting audit quality in the emerging market following the call from Salehi, Fakhri Mahmoudi, Daemi Gah (2019).

The remainder of this paper proceeds as follows. The next section reports the institutional background of the reforming of the Code of Ethics for Professional Accountants in relation to the auditor independences. Section 3 presents the relevant literature and the development of the hypotheses. Section 4 describes research design. Section 5 discusses descriptive statistics, the main results, and the additional test results. The final session provides the conclusion of the study.

2. THE INSTITUTIONAL BACKGROUND REGARDING AUDITOR INDEPENDENCE OVERSIGHT IN THAILAND

It is reported that there are no independent audit oversight arrangements in Thailand. Therefore, the Federation of Accounting Professions (hereafter; FAP) under the oversight of Accounting Professions Regulatory Commission is responsible for regulating the auditor independence (IFAC, 2018). That is, the FAP has been attempting to maintain the assurance for the quality of financial reporting by (1) setting auditing standards; (2) establishing qualification requirements for becoming auditors; (2) issuing practising licences to auditors; and (5) monitoring the behaviour of auditors by establishing ethical requirements and disciplinary mechanisms. Furthermore, the FAP also established a quality assurance review system for its members.

Due to the accounting scandals around the globe, International bodies reform the regulators and global standards for the world' capital markets. International Organization of Securities Commissions (hereafter; IOSCO), which was established in 1983, issued the Principles for Auditor Oversight. Later on, the International Forum of Independent Audit Regulators (hereafter; IFIAR) was established in 2006 enhancing audit oversight globally. The IOSCO and IFIAR have been working on the same purpose, which is to enhance audit quality and audit independence. In order to enhance the reliability and transparency of financial information circulating in the Thai Stock Market, the Securities and Exchange Commission of Thailand strengthened the audit quality control system following the global standard practices and decided to be a member of IFIAR in 2010.

Despite the fact that the audit independence has been continuously oversighted, the independence of audits is critical to the reliability and integrity due to on-going accounting scandals reported. Hence, the International Code of Ethics for Professional Accountants (including International Independence Standards) was strengthened by the independence provision addressing the long association between auditors and audit clients in 2018. This reform includes the requirements for auditors who provide a non-audit service for an audit client or a component of an audit client of a network firm to disclose such information according to the protocols. This is also implemented in Thailand.

Consequently, the audit firms and auditors in Thailand must comply with the independence standards specified by the global bodies (i.e. the International Code of Ethics for Professional Accountants and the Code of Ethics for Professional Accountants as issued by the FAP when auditing audit clients. For instance, those compliances and practices cover audit independence evaluation with regards to multiple perspectives, providing audit and non-audit services that are not prohibited, professional fee arrangements and its disclosure requirements, firm and partner rotation (EY, 2019; 2022). Besides, according to the SEC notification, the audit firms should be independent complying the Thai Audit Quality Control Standards (hereafter; TSQC1) established by the FAP (i.e. to rotate auditors every 5 years with 2- years cooling off periods and audit client must disclose audit and non-audit fees paid to their external audit firms etc.). This is also assessed and reported by the World Bank Group that practices are fully implemented.

To sum up briefly, the evolution and reforms of the Code of Ethics for Professional Accountants focusing on audit independence leads us to believe that the audit performance could be enhanced through the audit independence practices. More importantly, the non-audit fees and the rotation as well as voluntary rotation would indicate the auditor independence improvement in Thailand.

3. LITERATURE REVIEW AND THE DEVELOPMENT OF HYPOTHESES

3.1 The auditor independence and provision of non - audit services to audit clients

Auditor Independence is reflected in the independence of both the audit firm that provides external audit services and the individual auditors who perform the audits (Gantz, 2014). Auditor independence is an important matter due to it affects audit quality (DeAngelo, 1981). The independence of auditors has been argued among regulators and researchers over the decades since the world-wide accounting scandal existed in 2002; so called Enron scandal history.

Due to the Enron case, the Sarbanes-Oxley (hereafter, SOX) Act in 2002 strengthened auditor independence by prohibiting auditors from providing non-audit services that could impair the independence of the auditor (Tepalagul & Lin, 2015; Craswell, Stokes, & Laughton, 2002). This reformation of the law was motivated by the belief that quality of assurance service provided by Arthur Anderson to Enron was impaired because of their close relationship that was built through the non-audit services. Therefore, to re-establish the confidence of financial statements' users about audit performance, auditors are not allowed to provide NAS that could cause audit quality

to be questioned. For example, NAS that are related to financial information systems design, implementation, and internal audits are prohibited due to auditor independence could be compromised through either the social bonding or economic bonding (Financial Reporting Council, 2019; Bell, Causholli, & Knechel, 2015; DeFound, Raghunandan, & Subramanyam, 2002).

Regarding auditor independence, regulators also argued that when the relationship between auditors and audit clients becomes very long and the social bonding or the familiarity threat could arise. That is, auditors become very friendly with clients affecting professional skepticism (Bell, Causholli, & Knechel, 2015). Holding on to this assumption, the mandatory audit firm and auditor rotation requires that entities shall change their auditor after a legally set period of time (International Federation of Accountants (IFAC), 2018). This requirement, however, is implemented in different types of mandatory audit rotation. There are various countries that choose to implement the mandatory auditor rotation including Australia, China, France, Germany, United Kingdom, Malaysia including Thailand.

Although the independence of the auditor has been reformed over years, the public concerns are still reignited because of an increase in a number of reported accounting scandal cases relating to familiarity threat (e.g. Wirecard was reported to be on trial for fraud in 2022). Therefore, the research question regarding the auditor independence concerning the use of various proxies in research design would provide useful information for the public interest and literature.

3.2 Audit quality and its measurement

Auditors are expected to be able to complete a careful examination of the financial statements of audit clients and report an audit outcome through an audit report to the public. That is, audit quality can be recognized by an audit failure (Francis, 2004). Audit quality is defined as "the market-assessed joint probability that a given auditor will both discover a breach in the lients' accounting system and report the breach" (DeAngelo, 1981). In order to meet the level of audit quality, the definition implicitly suggests that auditors are necessary to maintain their competence and independence.

In order to determine audit quality, it is necessary to be able to identify audit failure. An audit failure occurs when generally accepted accounting principles are not strictly strengthened by auditors and when auditors issue false audit reports (e.g. issuing a clean audit opinion report when auditors are supposed to issue modified audit opinion type). Another perspective of audit failure could be viewed from financial restatements (GAO, 2003). The lawsuits against auditors can also represent audit failure (Francis, 2004; Palmrose & Scholz, 2000). All perspectives towards the determination of audit failures implicitly suggest that when auditors can audit financial statements of audit clients and report the outcome with no significant error, the audit quality level is met.

Audit quality can be viewed in multiple ways. Martin, 2013 discusses audit quality from audit firms' perspective, which is the capability of audit firms to manage resources and form an audit process to assess the quality of audit outcome. However, with limitations to access the audit process information, financial statements users like investors and creditors can only view audit quality from the outcome of audit work - high quality of financial information and an issued audit opinion type. Likewise, from the management of audit firms' point of view, audit quality is a result of the assurance service provided by external auditors to ensure high-quality financial information and those auditors are able to perform such service efficiently. Hence, using the financial reporting quality to surrogate audit quality would be able to provide useful results to a wide range of stakeholders.

Altogether, many accounting scandals and audit failures were due to long association between auditors and audit clients. Therefore, the regulation related to the audit profession has been reformed since 2002, to enhance auditor independence and audit quality accordingly. However, the common public concerns are still raised. Those concerns can be divided into two groups. First, audit fees are too high, especially for those auditors who work for the Big4. Second, in the meantime, audit quality is relatively low (Knechel, 2016). Implicitly, the concern that should be raised is whether audit quality can be improved via regulatory enforcements. For instance, the implementation of audit firm/audit partner rotation could cause audit teams into a shortage of audit resources and the low price-war strategy that is used within the audit profession industry may lead audit firms to be dependent on NAS fees and consequently the quality of audit will be compromised.

3.3 The auditor independence and the audit quality

The effects of the mandatory rotation and NAS have been extensively investigated in previous studies. Generally, results indicate that there is a positive association between the mandatory rotation and audit quality (Monroe & Hossain, 2013; Stewart, Kent, & Routledge, 2016; Bell et. al., 2015), while a few prior studies either report a negative relationship between audit tenure and audit quality or find no support for the notion that the mandatory rotation improves audit quality (Brooks, Cheng, & Reichelt, 2013; Chi, Huang, Liao, & Xie, 2009). The empirical findings on the effect of NAS on the audit quality are, however, very diversified. Using data from private firms in Sweden, Svanström (2013) reports that NAS is positively associated with NAS suggesting that NAS does not always impair auditor independence. However, Hohenfels and Quick (2020) find that the level of NAS fees paid by German firms increase the level of discretionary accruals suggesting that the higher NAS fees, the lower audit quality. Likewise, using New Zealand data, Hay et. al. (2006) contends that NAS potentially compromises auditor independence in appearance level.

Due to the inconclusive results and different regulatory enforcement of audit independence in Thailand and this could lead to alternative interpretations, our hypotheses are stated as follows;

H1: The auditor independence captured by non - audit service fees is associated with audit quality.

H2: The effect of the auditor independence captured by non - audit service fees on audit quality is more pronounced in the post-reform of the Code of Ethics for Professional Accountants period.

4. RESEARCH DESIGN

4.1 Sample and Data Collection

Our initial sample included a total of 829 firms listed in the Thai Stock Market as at September 27, 2022. The sample period starts from 2013 to 2021. The Securities and Exchange Communion (SEC) began the regulatory forces in audit quality control concerning auditor independence and expertise in 2013. We, therefore, started to collect the data from 2013. *First*, we excluded 170 firms that are listed in The Market for Alternative Investment from our initial sample due to the limited data on audit service fees and the inconsistency of data availability. (i.e. Mohamad Sani Har, Majdi Abdul Rashid, & Mohammed Shawtari, 2012 etc.) *Second*, we dropped 76 firms that are classified as Banking and Insurance companies due to the differences in institutional structures and financial reporting regulations. *Third*, we further excluded 3 financially distressed firms. The final sample size comes to 580 firms (5,220 firm-year observations). Our final firm-year observations come to 3,699 due to the missing required data. Sample selection procedures are presented in Table 1.

To investigate the effect of auditor independence on audit quality, we collect data from three main sources. *First*, we manually collected non-audit service fees and audit fees from firms' annual reports. *Second*, we gather financial information (i.e. net income, operating cash flows and total assets etc.) from Eikon (Thomson Reuters Datastream) to construct accrual variables following Modified Jones Model (1995). *Third*, we obtained other relevant information such as company age from the Stock Exchange of Thailand.

Table 1 Sample Selection Procedures

		Firm-Year Observations
Initial Observations	Thai listed Companies (829 firms)	7,461
Excluding Firms		
	The MAI firms (170 firms)	(1,530)
	Banking and insurance firms (76 firms)	(684)
	Firms with financial distress (3 firms)	(27)
	Final example (580 firms)	5,220
Missing Data		(1,551)
Final firm-year observation		**3,669**

4.2 Variables used in test

- **Independent Variables:**

A variable of interest of this study is the auditor independence captured by non-audit service fees following Firth, 2002; Chen, Elder, & Liu, 2005; Merino, Blandon, & Blasco, 2019.

- **Dependent Variable**

We indirectly capture audit quality using discretionary accruals; performance matched discretionary accrual model (2005) which developed from Modified Jones Model (1995) by Kothari, Leone, and Wasley (2005), as used in Hohenfels and Quick (2020) and Hossain (2013). Kothari et. al., (2005) postulates that matching based on ROA_t can perform better than matching ROA_{t-1}, subsequently providing the best specified measures of discretionary accruals among simulated event conditions. The measurement procedures of performance matched discretionary accrual model (2005) are described as the following steps

Step 1: calculating the Total Accruals

Despite the fact that there are two approaches to calculate the total accruals; balance sheet approach and cash flow approach. This study employed the cash flow approach due to its relative precision in total accrual estimate (Hribar & Collins, 2002). The equation (1) that is used in total accrual (*TACC*) calculation is as follow;

$$TACC_{i,t} = EBXI_{i,t} - CFO_{i,t} \quad (1)$$

Where

$TACC_{i,t}$ is total accrual of firm i, year t.
$EBXI_{i,t}$ is earning before income tax and extraordinary items of firm i, year t.
$CFO_{i,t}$ is net cash flow from operating activities of firm i, year t.

Step 2: Establishing Performance Matched Discretionary Accruals Model (2005)

In order to obtain Performance Matched Discretionary Accruals model (2005), we established the equation which is stated as follows;

$$TACC_{i,t} / A_{i,t-1} = \alpha_{1i} (1 / A_{i,t-1}) + \alpha_{2i} (\Delta REV_{i,t} / A_{i,t-1}) + \alpha_{3i} (PPE_{i,t} / A_{i,t-1}) + \alpha_{4i} ROA_{i,t} + \epsilon_{i,t} \quad (2)$$

Where

$TACC_{i,t}$ is the total accrual of firm i, year t.
$A_{i,t-1}$ is the total asset of firm i, year t-1.
$\Delta REV_{i,t}$ is the changes in total revenue of firm i, year t.
$PPE_{i,t}$ is the value of total property plant and equipment recognized in the statement of financial position of firm i, year t.
$ROA_{i,t}$ is the return on asset ratio of firm i, year t.
$\epsilon_{i,t}$ is the equation error of firm i, year t.

Step 3: Calculating Non-Discretionary Accruals

Using regression coefficients that were received from step 2 to calculate non-discretionary accruals using the equation 3. The equation 3 is written as follows;

$$NDA_{i,t} = \alpha_{1i} (1 / A_{i,t-1}) + \alpha_{2i} [(\Delta REV_{i,t} - \Delta AR_{i,t}) / A_{i,t-1}] + \alpha_{3i} (PPE_{i,t} / A_{i,t-1}) + \alpha_{4i} ROA_{i,t} \quad (3)$$

Where

$NDA_{i,t}$ is Non-Discretionary Accruals of firm i, year t.
$\Delta AR_{i,t}$ is the changes in accounting receivable amount of firm i, year t.

Step 4: Obtaining Discretionary Accruals

To find the discretionary accruals, we employed the equation 4, presented as follows;

$$DA_{i,t} = (TACC_{i,t} / A_{i,t-1}) - NDA_{i,t} \quad (4)$$

Where

$DA_{i,t}$ is the values representing discretionary accruals of firm i, year t.

To test hypothesis 1 which hypotheses that auditor independence; using non-service audit fees as a proxy for auditor independence, improves audit quality, we established equation 5 that is stated as the following equation.

$$DA_{i,t} = \alpha + \beta_1 NAS_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 ATEN_{i,t} + \beta_4 ASIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 AGE_{i,t} + \beta_7 LOSS_{i,t} + \beta_8 CFO_{i,t} + \beta_9 INDUS_{i,t} + \epsilon_{i,t} \quad (5)$$

Where

$DA_{i,t}$ is the absolute value of the discretionary accruals of firm i, year t, capturing the audit quality and it is our dependent variable.
$NAS_{i,t}$ is the amount of non-audit service fees of firm i, year t, representing for the auditor independence which is our variable of interest for hypothesis 1 test.
$SIZE_{i,t}$ is the total assets of firm i, year t, captured for firms' size.

$ATEN_{i,t}$ is a dummy variable given 1 if the number of periods-years an auditor audits a client is over 5 years, otherwise 0.
$ASIZE_{i,t}$ is a dummy variable assigned 1 if the firms are audited by Big 4 firms; PwC, EY, KPMG, and Deloitte, otherwise 0.
$LEV_{i,t}$ is the leverage ratio of firm i, year t and calculated by dividing total liabilities by total assets, representing firms' financial risk
$AGE_{i,t}$ is the number of years that the company has existed.
$LOSS_{i,t}$ is a dummy variable, given 1 if the firm reported loss, otherwise 0.
$CFO_{i,t}$ is the net cash flow from operating activities of firm i, year t.
$INDUS_{i,t}$ is the industry type.
$€_{i,t}$ is the error of the regression equation.

We employed the regression equation 6 to test hypothesis 2 which hypotheses that after the professional body issued the professional ethic concerning independence of auditor issued in 2018, audit quality will be improved. The equation 2 is stated as follows;

$$DA_{i,t} = \alpha + \beta_1 NAS_{i,t} + \beta_2 PrePost_{i,t} + \beta_3 (NAS*PrePost)_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 ATEN_{i,t} + \beta_6 ASIZE_{i,t} + \beta_7 LEV_{i,t} + \beta_8 AGE_{i,t} + \beta_9 LOSS_{i,t} + \beta_{10} CFO_{i,t} + \beta_{11} INDUS_{i,t} + €_{i,t} \quad (6)$$

We further performed a subsampling test divided samples into two groups; the first group is the firm-year observations obtained prior 2018 (so called the pre-reform the Code of Ethics period) and the second group represents firm-year observations after 2018 (so-called the post reform of the Code of Ethics period). We then employed equation 5 to regress and analyse Hypothesis 2. We planned to use the Wald statistical test to analyse whether there is a significant difference between the regression coefficients of NAS of the pre-reform group and of the post-reform group.

4.3 Additional tests for robustness

To robust the H1 results, the current study further performed additional analysis by using alternative measurements to capture the auditor independences. First, we employed the abnormal audit fees (*ABAFEE*) to proxy for auditor independence. This is because abnormal audit fees received by audit firms are likely to be the incentive and compensate for audit reputation losses and hence allow audit clients to conduct earnings management that reduces audit quality (Kinney and Libby 2002; Krauß, Pronobis, & Zülch, 2015). Second, the NAS fees are proportional to total fees; NAS fees plus audit fees) (*NASRATIO*) are used to capture auditor independence following Schneider, Church and Ely (2006) reflecting the notion that non - audit service provided by audit firms to audit clients would impair either auditor independence in fact or in mind. Third, we acquired a dummy variable giving 1 if firms involve voluntary audit rotation; a signing partner rotation occurs before the mandatory rotation period, otherwise 0 (*ROTATE*). We then regress the alternative measurements using regression equation 5.

5. DESCRIPTIVE STATISTICS AND RESULTS

Table 2 and Figure 1 describe the descriptive statistics. Using the Performance Matched Discretionary Accruals model (2005), *DA* is 0.06 on average (untabulated exponential value of it is about 1 million Thai Baht). According to Figure 1, the mean value of yearly NAS fees tends to increase, which leads to the increase of the proportion of NAS fees to total fees (*NASRATIO*). Abnormal audit fees (*ABAFEE*) has a mean value of 2.82 (untabulated exponential value of it is 126 million Thai Baht, on average). Total samples in this study were audited by the Big 4 about 64% (*ASIZE).* There are about 9% of audit partners that are rotated after providing assurance service for 5 years to one client consecutively (*ATEN*).

The characteristics of samples of this study will be described beginning with the firm size, followed by the financial leverage, cash flows from operating activity, financial loss and age. Total assets of audit clients that are used as samples in this student range from 11.42 million to 38,670.30 million Thai Baht. That is, the firm size of audit clients is about 5,261.80 million Thai Baht.

Table 3 depicts the Pearson correlation coefficients. The results suggest that NAS fees have a significantly negative correlation with discretionary accruals (*DA*) (r=-0.15). Likewise, Abnormal audit fees also negatively correlated with *DA* (r=-0.09). Consistently, the proportion of NAS fees to total fees (*NASRATIO*) shows a negative correlation with *DA* (r=0.09). The interaction between NAS and the post-effective periods of the reformed Code of Ethics (*NAS*Prepost*) further indicates the stronger negative correlation with *DA* (r=0.12). In contrast to other

proxies for auditor independence, audit partner rotation (*ROTATE*) has an in-significantly positive correlation with *DA*. Overally, excluding control variables, NAS and alternative measurements that proxy for auditor independence reduces discretionary accruals and hence increases audit quality.

Table 2 Descriptive statistics

Variable	N	Mean	Std. Dev.	Min	Max
Panel A: Continuous variables					
DA[1]	3,669	0.06	0.05	0.00	0.19
NAS	3,669	0.24	0.53	0.00	2.13
ABAFEE	3,669	2.82	1.78	0.38	7.34
NASRATIO	3,669	0.04	0.08	0.00	0.77
CFO	3,669	1,235.08	2,402.65	-584.43	9,398.41
SIZE	3,669	18,053.70	29,517.70	789.87	11,4368.00
LEV	3,669	0.43	0.22	0.00	1.39
AGE	3,669	21.84	10.95	0.00	47.00
Panel B: Dichotomous variables					
Variable	**N (100%)**		**Yes (1) (%)**	**No (0) (%)**	
PrePost	3,669 (100)		1,841 (50.18)	1,828 (49.82)	
ROTATE	3,669 (100)		1,090 (29.71)	2,579 (70.29)	
Panel B: Dichotomous variables					
Variable	**N (100%)**		**Yes (1) (%)**	**No (0) (%)**	
ATEN	3,669 (100)		338 (9.21)	3,331 (90.79)	
ASIZE	3,669 (100)		2,335 (63.64)	1,334 (36.36)	
LOSS	3,669 (100)		705 (19.22)	2,964 (80.78)	

Note: All variables are tested for normality. Some variables are winsorized at top and bottom at 5% to meet the normal distribution assumption for empirical models. [1] *DA* represents the amount of discretionary accruals using the Performance Matched Discretionary Accruals model (2005). The DA can be varied by the models used in calculation (Kothari et al., 2005).

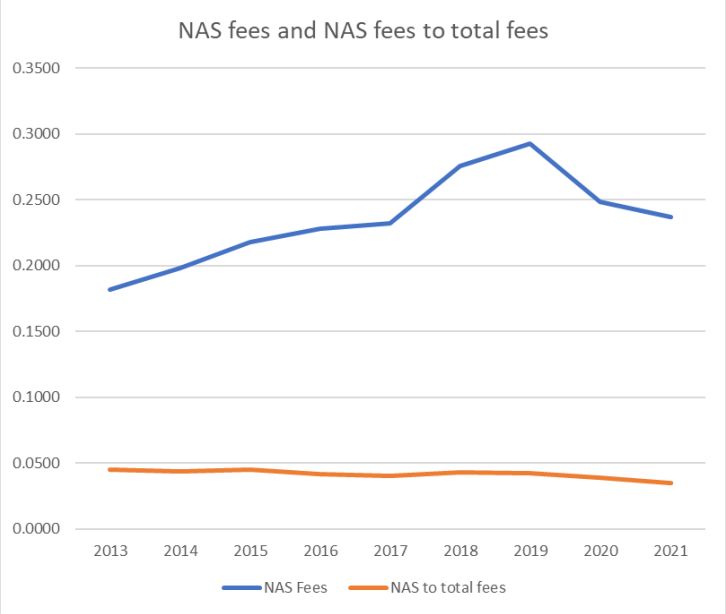

Figure 1 Average NAS fees and NAS fees to total fees (Unit: million THB)

Table 3 Pearson Correlation Analysis

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
DA_t *(1)*	-														
NAS_t *(2)*	-0.15*														
$PrePost_t$ *(3)*	-0.04	0.05	-												
NAS_t *$PrePost_t$ *(4)*	-0.12*	0.73*	0.31*	-											
$ROTATE_t$ *(5)*	0.05	-0.00	-0.06*	-0.03	-										
$ABAFEE_t$ *(6)*	-0.09*	0.24*	-0.00	0.22*	-0.00*	-									
$NASRATIO_t$ *(7)*	-0.09*	0.68*	-0.02	0.44*	0.02	0.03	-								
$SIZE_t$ *(8)*	-0.27*	0.53*	0.06	0.42*	-0.02	0.32*	0.19*	-							
$ATEN_t$ *(9)*	-0.01	0.02	0.16*	0.05	-0.21*	-0.02	0.02	0.02	-						
$ASIZ_t$ *(10)*	-0.10*	0.22	0.06*	0.17*	-0.04	0.04	0.11*	0.27*	0.05	-					
LEV_t *(11)*	0.02	0.17*	-0.01	0.13*	0.01	0.04	0.01	0.33*	-0.02	0.16*	-				
AGE_t *(12)*	-0.07*	-0.03	-0.15*	-0.06*	0.03	-0.01	-0.07*	0.04	-0.03	-0.08*	0.02	-			
$LOSS_t$ *(13)*	0.13*	-0.07*	0.04	-0.04	0.02	-0.02	-0.07*	-0.11*	0.00	-0.10*	0.10*	0.12*	-		
CFO_t *(14)*	-0.19*	0.46*	0.02	0.35*	-0.01	0.23*	0.19*	0.81*	0.03	0.24*	0.22*	0.04	-0.17*	-	
$INDUS_t$ *(15)*	0.04	0.02	0.00	0.02	-0.00	0.06*	-0.05	0.14*	-0.02	0.03	0.17*	-0.11*	-0.01	0.14*	-

* $p<0.05$

Table 4, Column (1) to (4) presents the results of the regression model (5) and (6) as well as the subgroup test results. All columns employed the same dependent variable; discretionary accruals (*DA*). Column (1) shows the results of the H1 which indicates that NAS are negatively associated with DA, but the association is insignificant. This weak relationship seems to reflect the notion that NAS fees may capture the knowledge spillover theory rather than causing an economic bonding effect. Except for audit partner tenure (*ATEN*) and certain industries, coefficients of other control variables are significantly associated with *DA*. *SIZE* is negatively related to DA (t = -11.12, p-value = 0.001) suggesting that larger firms have lower discretionary accruals (Swastika, 2013; Naz, Bhatti, Ghalfoor, & Khan, 2011). There is a significantly negative relationship between *ASIZE* and *DA* (t = -2.29, p-value <0.01) implying that firms that appointed auditors from the Big 4 firms to audit their financial statements tend to have lower discretionary accruals. Firms with higher debt to equity ratio (*LEV*) represent higher financial risk and hence tend to have higher discretionary accruals (t = 5.79, p-value < 0.01). A higher number of years that firms are listed, the lower discretionary accruals (t = -4.69, p<0.01). Loss companies (*LOSS*) tend to have larger discretionary accruals (t = 6.42, p-value < 0.01). Likewise, firms with larger amounts of cash flow from operating activities (*CFO*) are likely to have bigger discretionary accruals (t = 3.21, p - value<0.01). Interestingly, firms that are listed in *INDUS7* which represents the Information Technology sector tend to report larger discretionary accruals. This is probably due to the complexity environment (Napier & Stadler, 2020)

Column (2) shows the results of the H2 test predicting that after the reform of the Code of Ethics in 2018, the quality of assurance service will be improved. Results show that *PrePost* is negatively associated with *DA* recalling that *PrePost* is a dummy variable given 1 if the data period is 2018 onwards, otherwise, 0 (t = -1.99, p-value <0.05). However, we do no find evidence on the interactive variable (*NAS * PrePost*) suggesting that either NAS before or after the reform of the Code of Ethics regarding auditor independence, NAS does not affect quality of audit. As for the control variables, results are as discussed previously.

Column (3) and (4) further provide the results from the subsampling test. Results demonstrate that there is no significant difference in coefficients between NAS of the before and after the reform of the Code of Ethics periods.

Table 4 Multiple Regression Results: Main Results

	Dependent Variable: Discretionary Accruals (DA)			
	(1)	**(2)**	**(3)**	**(4)**
	H1	**H2**	**Subgroup; Pre**	**Subgroup; Post**
Variables				
NAS_t	-0.002	-0.004	-0.003	-0.001
	[-0.96]	[-1.41]	[-0.92]	[-0.32]
$PrePost_t$		-0.004**		
		[-1.99]		
$NAS_t * PrePost_t$		0.003		
		[1.05]		
Control variables				
$SIZE_t$	-0.000***	-0.000***	-0.000***	-0.000***
	[-11.12]	[-11.00]	[-7.66]	[-7.88]
$ATEN_t$	-0.001	-0.000	0.005	-0.002
	[-0.33]	[-0.06]	[0.81]	[-0.51]
$ASIZE_t$	-0.005***	-0.005**	-0.003	-0.006**
	[-2.59]	[-2.53]	[-1.28]	[-2.26]
LEV_t	0.023***	0.023***	0.023***	0.023***
	[5.79]	[5.72]	[3.83]	[4.15]
AGE_t	-0.000***	-0.000***	-0.000***	-0.000***
	[-4.69]	[-4.89]	[-3.74]	[-3.38]
$LOSS_t$	0.014***	0.014***	0.016***	0.011***
	[6.42]	[6.53]	[5.14]	[4.00]
CFO_t	0.000***	0.000***	0.000**	0.000**
	[3.24]	[3.17]	[2.42]	[2.08]
INDUS2	-0.010**	-0.010**	-0.004	-0.015***
	[-2.35]	[-2.36]	[-0.62]	[-2.66]
INDUS3	0.000	0.000	-0.003	0.004
	[0.07]	[0.02]	[-0.71]	[0.96]
INDUS4	-0.005*	-0.005*	0.001	-0.011***
	[-1.74]	[-1.80]	[0.12]	[-2.65]
INDUS5	-0.003	-0.003	0.002	-0.009*
	[-0.84]	[-0.91]	[0.41]	[-1.77]
INDUS6	0.003	0.003	0.004	0.003
	[1.16]	[1.12]	[0.88]	[0.73]
INDUS7	0.010***	0.010***	0.012**	0.008

	Dependent Variable: Discretionary Accruals (DA)			
	(1)	**(2)**	**(3)**	**(4)**
	H1	**H2**	**Subgroup; Pre**	**Subgroup; Post**
	[2.65]	[2.62]	[2.21]	[1.50]
Constant	0.071***	0.073***	0.072***	0.072***
	[19.59]	[19.30]	[13.19]	[14.77]
Observations	3,669	3,669	1,828	1,841
R-squared	0.11	0.11	0.11	0.13
Adj. R-squared	0.11	0.11	0.10	0.12
VIF	1.87	1.96	1.91	1.86

Note: t- state is in the blanket
* p<10
** p<0.05
*** p<0.01

Table 5, Column (1) to (3) displays the results of the robustness check of H1 using alternative variables; (1) *ROTATE*; not legally set period of audit partner rotation, (2) *ABAFEE*; abnormal audit fees, and (3) *NASRATIO*; the proportion of NAS fees to total fees. Discretionary accruals are used as the dependent variable for all Columns following the empirical model (5). Column (1) shows that *ROTATE* is positively correlated with *DA* (t = 2.89, p-value < 0.01) suggesting that non-legally set periods of audit partner change tends to increase discretionary accruals. This is perhaps because the voluntary audit partner change; the cooling-off periods, can lead to an indirect negative effect on audit quality due to the change partners need to learn a new client's environment and industry (Daugherty, Dickins, Hatfield, & Higgs, 2013). In other words, independence is being traded off with specialisation. Column (2) reports no evidence on abnormal audit fees. Column (3), however, points out that the higher level of non-audit service fees to total fees, the lower discretionary accruals. This supports the theory of knowledge spillover between auditors and audit clients via non-audit service activities, holding on the assumption that the protocol when auditors perform non-audit services to clients is implemented.

Table 5 Robustness Test using Alternative Variables to capture the auditor independence

	Dependent Variable: Discretionary Accruals (DA)		
	(1)	**(2)**	**(3)**
Variables			
$ROTATE_t$	0.005***		
	[2.89]		
$ABAFEE_t$		-0.000	
		[-0.11]	
$NASRATIO_t$			-0.024**
			[-2.30]
Control variables			
$SIZE_t$	-0.000***	-0.000***	-0.000***
	[-11.92]	[-11.55]	[-11.69]
$ATEN_t$	0.001	-0.001	-0.001
	[0.26]	[-0.33]	[-0.32]
$ASIZE_t$	-0.005***	-0.005***	-0.005**
	[-2.62]	[-2.67]	[-2.54]
LEV_t	0.023***	0.023***	0.023***
	[5.77]	[5.73]	[5.66]
AGE_t	-0.000***	-0.000***	-0.000***
	[-4.71]	[-4.62]	[-4.77]
$LOSS_t$	0.014***	0.014***	0.014***
	[6.37]	[6.40]	[6.36]
CFO_t	0.000***	0.000***	0.000***
	[3.18]	[3.18]	[3.26]
INDUS2	-0.009**	-0.010**	-0.010**
	[-2.31]	[-2.29]	[-2.46]
INDUS3	-0.000	0.000	0.000
	[-0.00]	[0.05]	[0.14]
INDUS4	-0.005*	-0.005*	-0.006*
	[-1.74]	[-1.69]	[-1.83]
INDUS5	-0.003	-0.003	-0.003
	[-0.84]	[-0.79]	[-0.80]
INDUS6	0.004	0.004	0.003
	[1.23]	[1.20]	[1.05]
INDUS7	0.010***	0.010***	0.010***

Dependent Variable: Discretionary Accruals (DA)			
	(1)	**(2)**	**(3)**
	[2.68]	[2.70]	[2.60]
Constant	0.069***	0.071***	0.072***
	[18.96]	[18.00]	[19.70]
Observations	3,669	3,669	3,669
R-squared	0.11	0.11	0.11
Adj. R-squared	0.11	0.11	0.11
VIF	1.82	1.87	1.82
Note: t- state is in the blanket			
* p<10			
** p<0.05			
*** p<0.01			

6. CONCLUSION

The scrutiny of the public on auditor independence leads accounting professional bodies to elaborate the Code of Professional Conduct in providing non-audit service to audit clients. Although auditor independence literature is quite developed, the effect of non-audit service on audit quality is unsettled. This study explores the effect of NAS as a proxy of auditor independence on audit quality including post-reform of the Code of Ethics for Professional Accountants period. From various mechanisms, this study focuses on NAS which includes *ABAFEE*, *NASRATIO*, and *ROTATE*. In this study, audit quality is measured by the performance matched discretionary accruals model. *NAS* of non-financial listed companies in Thailand over 9 years are analysed using multiple regression analysis. The finding indicates that *NAS* does not have an effect on audit quality. This means NAS does not impair the auditor independence in order to provide assurance services to clients. The results also find that the alternative measurement of audit quality; the revision of the Code of Ethics for Professional Accountants and *ABAFEE* are less likely to improve audit quality. Moreover, the voluntary audit partner rotation is more likely to compromise audit quality. This can imply that the more rotation of the auditor does not seem to promote audit independence. The non-mandatory audit partner rotation may impair audit quality because the specific knowledge will be raised by having direct experiences of clients. However, *NASRATIO* significantly affects audit quality. Overall results indicate that in this market, audit quality does not seem to be improved through the pronouncement of audit independence.

This study is subject to limitations. First, this study employed Discretionary Accruals using Performance Matched Discretionary Accruals model (2005) as a proxy of audit quality to conclude the results. Other measurement models such as the Jones model (1991) and modified Jone model (1995) may not provide similar results. Second, NAS disclosure is inconsistent; the type of NAS is not always disclosed. The findings may differ in other settings that NAS disclosure is required. Future research may re-examine the impact of auditor independence on audit quality by considering whether the type of NAS affects audit quality.

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