

The impact of industry specialist on the relationship between returns and future earnings

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Abstract

Financial statements reveal the company's profitability and be used as an important indicator of the risk assessment. Auditor industry specialists can provide better quality of financial reports and informative disclosures. According to Lundholm and Myers (2002), we examine whether the fact that accountants or audit firm are industry specialists will affect the relationship between returns and future earnings. Since there exists the special system of dual attestation in Taiwan, we divide the accountants into lead auditors or concurring auditors to examine the above relationship. Empirical results indicate that the higher future earnings response coefficients are associated with the companies audited by industry specialist, the higher number of industry specialists, the more industry experience of industry specialists and the greater market value of company. These findings imply that more information about future earnings are revealed. Therefore, it improves the disclosure of company's future earnings when the accountants or audit firms are industry specialists. In addition, we do not find the evidence that the future earnings response coefficients in companies audited by the lead auditor as industry specialist are higher than those in companies audited by the concurring auditor as industry specialist and in specialist accounting firms.

Keywords : Industry specialist, Dual-signature, Future earnings response coefficient (FERC)

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1. Introduction

The company's financial reports revealed in the capital market include information contents, such as the timing of the financial statement release, the auditor change, and the reason for the changing. When there may be a great change in the company internal management or the company's financial report quality, the market will react these information on the stock price immediately. If the company is a lack of information transparency, there will be information asymmetry between the company's internal management and external investors. Thus, investors will more rely on the financial statements which are issued by third-party auditors. Since there are some cases of accountant fraud such as Enron and Procomp in recent years, the U.S. Securities and Exchange Commission (SEC) passed the Sarbanes-Oxley Act to make major reforms in the independence of accountants. Therefore, the issue that the opinions of financial statements express appropriately, and the audit quality provided by audit firms and accountants is suitable should have a significant impact on the company and the stock market.

Audit firm brands and industry specialists have been used to improve audit quality in the past literature. It is generally believed that greater audit firms offer higher audit quality. DeAngelo (1981) finds that when the size of the audit firm is larger, the auditor firm don't accept the preference of clients because the audit fee doesn't concentrate on single client. It means the auditors of larger audit firms are more independent.

Teoh and Wong (1993) analyze the difference in earnings response coefficients between the clients of Big 8 and non-big 8 audit firms in US. Empirical results show that the earnings response coefficients in the clients of Big 8 audit firms are higher than those of non-big 8 firms. Collins et al. (1994) find that the relationship between the company's current stock price and current earnings is not significant, which may be due to the lack of timeliness of current earnings and full of "noise" in the market. After adjusting the expected error, it is found that the explanatory power of future earnings for the current stock price is three to six times more than current earnings. Thus, the current stock prices do affect current earnings and future earnings.

Knechel et al. (2007) extended the issue of the size of the former and successor firms to the degree of industrial expertise of the former and successor auditors. Empirical results show firms switching between Big 4 auditors experience significant positive abnormal returns when the successor auditor is an industry specialist, and they experience significant negative abnormal returns when the successor auditor is not a specialist. In addition, firms that switch from a specialist Big 4 auditor to a non-Big 4 auditor suffer the largest negative market reaction and the market reacts most positively when a company switches from a non-Big 4 auditor to a Big 4 auditor who is not a specialist, suggesting that the market does perceive audit quality

differences based on industry specialization to be relevant to the valuation of a company's market value.

Accounting scandals like Enron caused investors suspect the independence of auditors and the credibility of financial statements. To avoid accounting fraud in the future, some scholars propose to reduce the length of the accountant's tenure by rotation (Farmer et al., 1987; Brody and Moscovice, 1998; Davis et al., 2002). Proponents for audit firm rotation assert that the regulation will improve the independence and/or quality of audits. The most predominant argument for audit firm rotation is that it will limit the formation of auditor-client relationships that can sometimes lead to compromising independence. Working in such close proximity with management over several years can impair the judgment of auditors causing them to identify with the interests of management as opposed to those of the public. Rotating auditors every few years will prevent these subconscious biases from developing. On the opposite, some of the major opponents of auditor rotation come from the accounting profession. One of the most mentioned problems with auditor rotation is the added audit cost to the audit firm, the client, and consequently the public. At the beginning of an audit engagement, various startup costs are incurred as the audit firm gathers information about the company and its systems and processes. The absorption of these initial costs could be considered an investment to the audit firm if it believed that the relationship with the client could develop into a long term one. However, if the company that an auditor has spent all the time and money into studying must obtain a new auditor every five years, then the audit firm has no reason not to pass the incurred start up costs on to its client.

In addition, although auditors with short tenure are associated with lower earnings quality because of the lack of client-specific knowledge and/or low balling. Gul et al. (2009) find that the association between shorter auditor tenure and lower earnings quality is weaker for firms audited by industry specialists compared to non-specialists. One possible explanation of these results might be that auditors with industry expertise in the client's business are more likely to detect irregularities and misrepresentations and provide higher quality audits, even if auditors lack client-specific knowledge as a result of short auditor-client relationships.

Wang et al. (2012) use firm size and industry specialists as proxies to explore the relationship between audit quality and information asymmetry. Empirical results show that audit quality could reduce the extent of information asymmetry of the company. Dunn et al. (2000) find that industry-specialist audit firms in unregulated industries provide value added services to their clients in the form of improved disclosure quality, and that the choice of an industry-specialist auditor is a signal of enhanced disclosure quality. Moreover, audit firms have no impact on disclosure quality in regulated industries where regulators provide an additional

layer of monitoring, there is less information asymmetry, and clients have less incentive and opportunity to provide enhanced disclosure quality.

Taiwan's accountant attestation is dual-signature system, which require two or more auditing partners to sign the client's audit report together. Thus, they have same responsibilities in law. Under the dual-signature requirement, the loss of two auditors may be larger than the loss of one auditor. Therefore, the audit quality may be higher under the dual-signature system as opposed to the single signature system. In addition, two auditors may attend to different information in the auditing process, which can increase audit quality.

In this paper, we use the auditors' group as a unit to examine the difference in audit quality between individual auditors and audit firm industry specialists. We also explore whether audit quality and earnings quality make the external investors understand how future earnings value are. The main purposes of this study are as follows: first, to examine whether the current earnings of company audited by industry specialists has better future earnings prospect; Second, to explore the difference in FERC between the firms audited by individual auditors and the firms audited by firm industry specialist; Third, to discuss the difference in FERC due to industry experience of industry specialists.

Extant studies focus on the impact of industry specialists and tenure of auditor on the earnings response coefficient. Few studies discuss the influence of individual industry specialist and industry experience on FERC. To the best of our knowledge, our paper is the first article to explore the impact of individual industry specialist on the relationship between return and future earnings.

The remainders of this paper are organized as follows. Section 2 reviews the literature and develops testable hypotheses. Section 3 describes the data and variable definition. In Section 4, we present the empirical results. Section 5 provides the conclusion.

2. Literature Review and Hypothesis

2.1 Taiwan Attestation System

The audit quality may be affected by a country's legal environment, economic environment and culture. Except for the dual-signature system adopted by Taiwan and China, most countries adopt the single-signature system. Francis et al. (2009) analyze the impact of the two accountants audit on French company. Empirical results show that the companies with more agency problems tend to hire two Big 4 audit firms to audit, and the discretionary accrual is lower.

Working subjects of lead auditor and concurring auditor do not overlap. The entire audit program, communication with clients and making decisions are mainly based on the opinion of lead auditor (Reichelt and Wang, 2010; Chen and Li, 2006). The concurring auditor is in charge of reviewing and inspecting financial statements, assessing whether the opinions are appropriate. Guan et al. (2019) analyze whether the audit fees are affected by the gender of auditors, and the size of audit firms. Empirical results show that if one of the auditors are female, only lead auditor has higher audit fee and occurs in big audit firms.

Financial statements of Taiwan publicly listed (counter) companies must be jointly issued by two or more certified accountants. Most of the service for clients and audit process are based on auditor group, rather than audit firm as a unit. Chen and Li (2006) suggest that the industry knowledge is accumulated by auditors themselves, the audit firm does not provide any resource or assistance. When the mergers of audit firms happen, audit team members and the clients usually change the accountants who oppose the merger, indicating that the importance of individual auditor is different from the overall audit firm (Zhou, 2003).

2.2 Relevance of Future Earnings

Collins et al. (1994) find that the relationship between the company's current stock price and current earnings is not significant, which is due to the lack of timeliness of current earnings and the market is full of "noise". After adjusting the expected error, they find that the explanatory of future earnings for the current stock price increase to 3 to 6 times. Thus, the current stock price affects current and future earnings. Cho and Chang (2015) analyze Taiwan Listed companies which participate in the information evaluation system. Using the scores provided by evaluation system as the proxy for information transparency, they analyze the company's earnings quality. Empirical results show that information transparency strengthens the correlation between current return and future earnings. Information transparency can be enhanced by improving corporate governance. It also reduces information asymmetry and agency problems at the same time.

Huang et al. (2014) examine the relationship between institution investor conference and future earnings response coefficient (FERC). Empirical results show that the FERC of company who holds the conference is higher than that who does not hold. Institution investor conference plays an important role in reducing information asymmetry. Lin et al. (2014) use the companies which restated within 2005 to 2009 as a sample and find that the earnings response coefficient (ERC) of the company which proactively restated its financial statements is higher than the company that was forced to restate its financial statements.

2.3 Industry Specialists

Velury et al. (2003) suggest that accountants audited in specific industry obtain much more industry knowledge. The accumulation of industry experience and learning curve directly affect risk assessment and error detecting, which can enhance the audit quality (Maletta and Wright, 1996; Owoso et al., 2002; Balsam et al., 2003; and Krishnan, 2003). Lin (2017) explore the relevance of industry specialists, audit fee and corporate tax. Empirical results show that if auditors are industry specialists, the quality of corporate tax planning is better. If audit firms are industry specialists, the quality of corporate tax planning is also better. Nonetheless, while both auditors and audit firms are industry specialist, the relevance to tax planning is not higher than only auditor is specialist due to the specialty of auditors.

Hsu et al. (2012) find that related party transactions are negatively correlated with operating performance, indicating that the big shareholders transfer company capital through related party transactions for their benefits. It results in the bad operating performance and indirectly cause small shareholders loss. Empirical results support that industry specialists improve the operating performance of related party transactions. Chien and Chen (2009) find that the interest rates on newly issued corporate bonds of the companies audited by industry specialists are significantly lower, indicating that the creditors approve industry specialists can effectively reduce the agency conflicts. Jiang and Yang (2005) find that firms audited by industry specialists avoid using current accruals for earnings management.

2.4 Audit Tenure

Accounting scandals such as Enron cause investors to suspect the independence of auditors and the credibility of financial statements. Farmer et al. (1987) and Brody and Moscovice (1998) and Davis et al. (2002) agree with the accountant rotation to avoid accounting fraud. They believe that the accountants remain good relationship with clients based on the economic aspect. As the client is audited by the same audit firm for years, beside routine audit procedures, auditors are more likely to compromise on the customer's opinions and audit quality declines. On the opposite, those who oppose the rotation believe that independence is affected in the initial stage of the auditing and rotation does not improve the quality of auditing. Compared with newly appointed auditor, the auditor's specific industry knowledge is higher when the tenure was longer.

Johnson et al. (2002) analyze the relationship between auditor's tenure and quality of financial statement. The quality of financial statement in the short auditor's tenure for 2 to 3 years is lower than that in the medium auditor's tenure for 4 to 8 years. There is no evidence supports that long auditor's tenure (above 9 years) decreases the quality of financial statements. Geiger and Raghunandan (2002) take bankrupt companies from 1996 to 1998 as a sample to examine the relationship between accountant's tenure and audit failure. Empirical results show

that before the year of bankruptcy, the possibility that the companies are issued with going concern opinion is positively correlated with the accountant's, indicating that accountants were less likely issued going concern opinion and cause audit failure in the previous years of the new appointment. Stanley and DeZoort (2007) analyze the relationship between the tenure and restatements. They find that in the short tenure, both industry specialists and the audit fees are negatively correlated with the restatement, suggesting that if there is a new auditor appointment, the unfamiliarity with clients and the low audit fees may affected the audit quality. Gul et al. (2009) examine the impact of industry expertise and tenure on the earnings quality. Empirical results show that the specialty affects the relationship between tenure and earnings quality. The short audit tenure usually cause lower audit quality, but there is no difference in audit quality if the companies are audited by industry specialists.

2.5 Information Asymmetry

Wang et al. (2012) use firm size, audit tenure, discretionary accrual, and industry specialists as proxies of audit quality to explore the relationship between audit quality and information asymmetry. Empirical results show audit quality can reduce information asymmetry. When the lead auditors are industry specialists, audit quality has more effect on reducing information asymmetry. Firm brands and industry specialists have been the way to improve audit quality in the past literature. The market generally believes that big audit firms offer higher audit quality. DeAngelo (1981) point out that when the size of the audit firm is larger, the auditor firm does not accept the preference of clients because the audit fee does not concentrate on single client, indicating that larger size of the audit firm is associated with more independent auditor.

Llorente et al. (2002) explore the dynamic interaction relationship between volume and stock price and analyze the liquidity trading for the purpose of hedging by inform traders. In order to measure the information asymmetry, they use bid-ask spread and market value as proxies for information asymmetry. Empirical results present that higher bid-ask spread represents higher degree of information asymmetry, and higher market value is accompanied by lower degree of information asymmetry.

2.6 Hypothesis

Being audited by big firm and industry specialist seems to be the way to enhance audit quality, which can inhibit companies from using current accruals subject for earnings management and improve earnings quality. We infer that companies can hire industry specialists to audit, which would improve the information content of the company's earnings

and reduce the company's agency conflicts. Based on the above reasoning, we propose the following hypotheses.

H1a: Future earnings response coefficient (FERC) of the companies audited by industry specialists is higher than non-industry specialists.

Based on Taiwan's unique auditing environment, Chen and Li (2006) indicate that the auditing industry expertise in Taiwan is primarily based on the auditing experience of audit group, not of audit firm. Besides, clients of industry specialized auditors have higher earnings quality than the others. When Taiwan audit firms were merged in the past, audit team members and the clients usually job-hopped with accountants who opposed the merger, indicating the importance of individual accountants for the clients is higher than the accounting firm (Zhou, 2003). The working subject of lead auditor does not overlap with that of concurring auditor. The entire audit program, communicate with clients and making decisions are mainly decided by lead auditor (Reichelt and Wang, 2010; Chen and Li, 2006). The concurring auditor is in charge of reviewing and inspecting financial statements, and assessing whether the opinions are issued appropriately. Based on the above reasoning, the following hypotheses are proposed.

H1b: When lead auditors and audit firms are both industry specialists, future earnings response coefficient (FERC) of the lead auditors is higher than audit firms.

H1c: When concurring auditors and audit firms are both industry specialists, future earnings response coefficient (FERC) of the concurring auditors is higher than audit firms.

H1d: When lead auditors and concurring auditors are both industry specialists, future earnings response coefficient (FERC) of the lead auditors is higher than concurring auditors.

H1e: The future earnings response coefficient (FERC) is higher in the firm with more industry specialists audit.

Traditionally, industry specialists are defined as the percentage of audit firms in the specific industry. Thus, the auditors' industry experience depends on whether the audit firms are industry specialists. Few studies use individual auditor's industry experience to analysis the influence of industry specialist on FERC. Chen et al. (2016) find when the tenures of audit firms and concurring auditors are longer, the possibility to restate financial statements is lower, and

the industry experience in the firm level may have been reflected in the industry experience of lead auditors. Gul et al. (2009) argue that the association between shorter auditor tenure and lower quality of reported earnings is weaker for firms audited by industry specialists. The possible explanation might be that auditors with industry expertise in the client's business are more likely to detect irregularities and misrepresentations and provide higher quality audits, even if auditors lack client-specific knowledge as a result of short auditor–client relationships. Based on the above reasoning, we propose the following hypotheses.

H2a: The future earnings response coefficient (FERC) is higher in the firm whose lead auditors have higher industry experience.

H2b: The future earnings response coefficient (FERC) is higher in the firm whose concurring auditors have higher industry experience.

H2c: When the lead auditors are industry specialists, the future earnings response coefficient (FERC) is positively correlated with the industry experience.

H2d: When the concurring auditors are industry specialists, the future earnings response coefficient (FERC) is positively correlated with the industry experience.

Cho and Chang (2015) analyze Taiwan Listed companies which participated in the information evaluation system. They use the scores provided by evaluation system as the proxy for information transparency to explore the company's earnings quality. Empirical results find that better information transparency will enable investors to reduce the uncertainty of investment decisions, and thus its expected information about future earnings will be incorporated in the current year's stock return. In this study, we use market value as the proxy of information asymmetry to substitute the score in the evaluation system, and observe the effect of information asymmetry on future earnings. Based on the above reasoning, the following hypotheses are proposed.

H3: The future earnings response coefficient (FERC) is higher in the firm with larger market value.

3. Data and Variable Definition

3.1 Data

The sample is the Listed and OTC companies on TSE (Taipei Stock Exchange) from 2013 to 2016. The variables include the company's current and subsequent three consecutive years of stock price and EPS data. We exclude financial service industry and the firms' data and identify those firms which meet the definition of industry specialist of big audit firms. Our data consist of 4598 samples, and all of the data such as stock return, EPS, company characteristics and accountants are derived from TEJ (Taiwan Economic Journal).

Table 1 shows the industrial distribution of this sample. There are 1087 samples in 2013, 1127 samples in 2014, 1166 samples in 2015, and 1218 samples in 2016. During these years, the number of sample companies increases year by year. The industries are mainly distributed in masterboard (MB), chemistry, optoelectronics industry (OI), semiconductors (SEMI), electronic parts (EP), electromechanical facilities (EF), whose percentage of sample firms is more than 50%. The proportion of electronic parts is much higher than other industries.

Table 1 Industry Distribution

The sample period is from 2013 to 2016, with total 4598 observation, of which there are 1087 in 2013, 1127 in 2014, 1166 in 2015, and 1218 in 2016. The industry classification briefly divided into 29 categories (cement, food, Petrochemical, textile, construction, tourism, etc.). We present the top 6 proportion industries.

Year\Industry	MB	Chemistry	OI	SEMI	EP	EF	Other
2013	7.73%	7.64%	9.75%	8.37%	12.60%	5.80%	48.11%
2014	7.54%	7.99%	9.58%	8.61%	12.33%	6.30%	47.65%
2015	7.29%	8.49%	9.09%	8.66%	12.35%	6.69%	47.43%
2016	7.14%	8.87%	9.11%	9.03%	11.82%	6.98%	47.05%

3.2 Descriptive Statistics and Correlation Matrix

Table 2 presents descriptive statistics on the variables. The number of firm-year data is 4598 in the final sample. The average current return is $R_{i,t}$ 12.197%, and median is 2.869%. Observing the sum of future three-year return $R_{i,3t}$, we find that there is a large difference in the stock return between Taiwan listed companies and OTC, and the standard deviation also tends to increase during the sample period. Average previous EPS $X_{i,t-1}$ is 0.017, average current EPS $X_{i,t}$ is 0.035, and average future three-year EPS $X_{i,3t}$ is 0.14. There are 3882 samples corresponding to the generalized industry specialists $SPE_{i,t}$. The numbers of lead auditor industry specialists $ACC1_{i,t}$, concurring auditor industry specialists $ACC2_{i,t}$, audit firm industry specialist $FIRM_{i,t}$ are 176, 141, and 1349, respectively. The mean of industry specialists in a single company $Count_{i,t}$ is 1.580, and median is 1, indicating that most

companies are audited by 1 to 2 industry specialists. Average year of lead auditor industry experience $CEXP1_{i,t}$ is 9.242, and average year of concurring auditor industry experience $CEXP2_{i,t}$ is 8.771, suggesting that the average industry experience of lead auditors is much higher than concurring auditors.

Table 3 presents the correlation coefficient matrix of main variables. The previous earnings $X_{i,t-1}$ and the current return $R_{i,t}$ is negatively correlated, current earnings $X_{i,t}$ is positively correlated with the current stock returns $R_{i,t}$, and future earnings response coefficients are positively correlated with stock returns. The preliminary results of this paper are consistent with past literatures. The correlation coefficients between the variables are all less than 0.6, indicating that the variables have no collinearity problem.

Table 2 Descriptive Statistics

There are 4598 observations in the sample. Variables contain current stock return $R_{i,t}$, previous EPS $X_{i,t-1}$, current EPS $X_{i,t}$, sum of future EPS $X_{i,3t}$, sum of future stock return $R_{i,3t}$, the amount of industry specialists $Count_{i,t}$, lead auditor experience $CEXP1_{i,t}$, concurring auditor experience $CEXP2_{i,t}$. Control variables include company size $SIZE_{i,t}$, loss $LOSS_{i,t}$, standard deviation of NIBT $EARNSTD_{i,t}$, revenue growth rate $GROWTH_{i,t}$. The detailed definitions of variable are presented in appendix.

Variable	Mean	Median	S.D.	Maximum	Minimum
$R_{i,t}(\%)$	12.197	2.869	48.914	912.070	-71.127
$X_{i,t-1}$	0.017	0.048	0.198	0.909	-9.349
$X_{i,t}$	0.035	0.050	0.156	4.667	-1.568
$X_{i,3t}$	0.140	0.150	0.399	11.004	-2.900
$R_{i,3t}(\%)$	29.277	17.794	69.502	575.764	-192.235
$Count_{i,t}$	1.580	1	1.031	3	0
$CEXP1_{i,t}$	9.242	9	5.460	28	1
$CEXP2_{i,t}$	8.771	8	5.661	28	1
$SIZE_{i,t}$	8.383	8.158	1.387	14.885	4.369
$LOSS_{i,t}$	0.225	0	0.417	1	0
$EARNSTD_{i,t}$	51.524	32.977	76.720	2508.672	0.972
$GROWTH_{i,t}$	0.555	-0.025	48.054	3014.259	-566.255

Table 3 Correlation Coefficient Matrix

Dependable variable is current stock return $R_{i,t}$. Variables contain negative with previous EPS $X_{i,t-1}$, positive with current EPS $X_{i,t}$, positive with sum of future EPS $X_{i,3t}$, negative with sum of future stock return $R_{i,3t}$. Control variables include company size $SIZE_{i,t}$, loss $LOSS_{i,t}$, standard deviation of NIBT $EARNSTD_{i,t}$, revenue growth rate $GROWTH_{i,t}$. The detailed definitions of variable are presented in appendix.

	$R_{i,t}$	$X_{i,t-1}$	$X_{i,t}$	$X_{i,3t}$	$R_{i,3t}$	$SIZE_{i,t}$	$LOSS_{i,t}$	$EARNSTD_{i,t}$	$GROWTH_{i,t}$
$R_{i,t}$	1								

$X_{i,t-1}$	-0.036	1							
$X_{i,t}$	0.263	0.301	1						
$X_{i,3t}$	0.191	0.033	0.396	1					
$R_{i,3t}$	-0.053	-0.040	-0.005	0.370	1				
$SIZE_{i,t}$	-0.054	0.160	0.150	0.159	-0.001	1			
$LOSS_{i,t}$	-0.115	-0.231	-0.314	-0.531	-0.254	-0.226	1		
$EARNSTD_{i,t}$	0.186	-0.186	-0.025	0.103	0.135	-0.149	0.108	1	
$GROWTH_{i,t}$	0.058	-0.006	0.031	0.038	0.006	-0.011	-0.024	0.024	1

3.3 Variable Definition

3.3.1 Lead Auditor and Concurring Auditor

This paper analyzes the impact of industry specialists in auditor level on abnormal returns. Although two accountants are required to jointly audit, the lead auditor is mainly responsible for audit process, and concurring auditor only conducts analysis and reviews the financial statements. (Chen, 2010). According to past literature, we define the partner whose signature sequence on the left or above as the first accountant, and the partner whose signature sequence is on the right or below as the second accountant (Chin and Chi, 2009; Chi and Chin, 2011; Lee et al., 2013; Liao et al., 2013).

3.3.2 Industry Specialists

We define the audit firms as industry specialists if the amount of clients audited by this audit firm is the top two rank in this industry. The auditors are defined as industry specialists if the amount of clients audited by this auditor is the top ten rank in this industry. If we use define sales revenue or total assets to define industry specialists, it may cause small companies excluded. $SPE_{i,t}$ is a dummy variable, which is equal to one if company i is audited by generalized industry specialist in year t and zero otherwise. That is, if there is at least one industry specialist among audit firm, lead auditor and concurring auditor, we define this company as generalized industry specialist. In order to make a distinction, we also set three dummy variables, which are $ACC1_{i,t}$, $ACC2_{i,t}$, $FIRM_{i,t}$. $ACC1_{i,t}$ is a dummy variable, which is equal to one if the lead auditor of company i is industry specialist in year t and zero otherwise. $ACC2_{i,t}$ is a dummy variable, which is equal to one if the concurring auditor of company i is industry specialist in year t and zero otherwise. $FIRM_{i,t}$ is a dummy variable, which is equal to one if the company i is audited by industry specialist firm in year t and zero otherwise.

3.3.3 Industry Experience

According to Chen et al. (2016), we define industry experience as the accumulated years of audit tenure in the same industry from the beginning of the audit career. Four variables are defined as follows: Lead auditor experience ($CEXP1_{i,t}$), concurring auditor experience ($CEXP2_{i,t}$), lead auditor specialist experience ($SPE1Y_{i,t}$), concurring auditor specialist experience ($SPE2Y_{i,t}$). We use these variables to examine whether industry experience in accountants level and industry specialists affect FERC.

3.3.4 Control Variables

$SIZE_{i,t}$ is size of company i in year t, which is calculated by taking the natural log of total assets. $LOSS_{i,t}$ is dummy variable, which equal one if the sum of future earnings in year t for company i $X_{i,3t}$ is positive and 0 otherwise. $EARNSTD_{i,t}$ is the standard deviation of NIBT for Company i from year t to year t+3 divided by beginning total asset of company i in year t. $GROWTH_t$ is the revenue growth rate of company i in year t.

4. Empirical Results

This paper examines whether companies audited by industry specialists increase future earnings response coefficients (FERC). Based on Lundholm and Myers (2002) (LM model), we capture the information from industry specialists with FERC. Future earnings response coefficient is the coefficient obtained by regressing current stock returns on future earnings. According to two accountants' different industrial experience, we analyze the differences in FERC.

4.1 Industry Specialists and FERC

To examining whether industry specialists increases FERC, we use generalized industry specialist $SPE_{i,t}$ as main explanatory variables to run the following regression model.

$$\begin{aligned}
R_{i,t} = & \alpha_0 + \alpha_1 X_{i,t-1} + \alpha_2 X_{i,t} + \alpha_3 X_{i,3t} + \alpha_4 R_{i,3t} + \alpha_5 SPE_{i,t} + \alpha_6 SPE_{i,t} \times X_{i,t-1} \\
& + \alpha_7 SPE_{i,t} \times X_{i,t} + \alpha_8 SPE_{i,t} \times X_{i,3t} + \alpha_9 SPE_{i,t} \times R_{i,3t} + \beta_1 CV_{i,t} + \\
& \beta_2 CV_{i,t} \times X_{i,3t} + \varepsilon_{i,t}
\end{aligned} \tag{1}$$

where dependent variable $R_{i,t}$ is the current stock return, and the main explanatory variable is generalized industry specialist $SPE_{i,t}$; $X_{i,t-1}$ is the company i earnings per share (EPS) in year t-1 divided by the beginning stock price of year t; $X_{i,t}$ is the EPS of company i in year t divided by the beginning stock price of year t; $X_{i,3t}$ is the sum of three years EPS of company i from year t+1 to t+3 divided by the beginning stock price of year t; $R_{i,3t}$ is the sum of three years stock return for company i from year t+1 to year t+3; control variables $CV_{i,t}$ includes $SIZE_{i,t}$, $LOSS_{i,t}$, $EARNSTD_{i,t}$, $GROWTH_{i,t}$, $\varepsilon_{i,t}$ is the residual term. The detailed definitions of variable are presented in appendix.

α_2 is the current earnings response coefficient (ERC), which represents the relationship between stock returns and current earnings, and α_3 is the future earnings response coefficient

(FERC), which represents the relationship between stock returns and future earnings. Based on Huang et al. (2014), we expect that the sum of future return coefficient α_4 is negative, future earnings response coefficient α_3 is positive, earnings response coefficient α_2 is positive, and the previous EPS coefficient α_1 is negative. If α_8 is positive, H1a is supported, indicating that FERC of the companies audited by industry specialists is higher than that of non-industry specialists.

Table 4 presents the coefficient of $SPE_{i,t} * X_{i,3t}$ (α_8) is significantly positive at the 1% significance level (the coefficient and p-value are 0.3627 and 0.0000, respectively), which supports hypothesis H1a. Companies can improve audit quality by hiring industry specialist. It makes the financial statements more credible. The improvement of earnings quality also make investors full of expectation on the company's future earnings and the information of earning is fully reflected on current stock price. Thus, the companies audit by industry specialists have higher FERC than non-industry specialist companies.

Table 4 Regression for Industry Specialists and FERC

Dependable variable is current stock return $R_{i,t}$. Explanatory variables contain previous EPS $X_{i,t-1}$, current EPS $X_{i,t}$, sum of future EPS $X_{i,3t}$, sum of future stock return $R_{i,3t}$. Control variables include company size $SIZE_{i,t}$, loss $LOSS_{i,t}$, standard deviation of NIBT $EARNSTD_{i,t}$, revenue growth rate $GROWTH_{i,t}$. The detailed definitions of variable are presented in appendix. P-value is reported in parentheses. ***, **, and * denote significant at 1%, 5%, and 10% level.

Variable	Model 1		Model 2	
	Coefficient	P value	Coefficient	P value
Intercept	0.1480***	0.0000	0.2449***	0.0000
$X_{i,t-1}$	0.0011	0.9823	0.2914***	0.0000
$X_{i,t}$	0.1890**	0.0214	0.0151	0.8565
X_{3t}	0.0829***	0.0095	0.9256***	0.0000
$R_{i,3t}$	-0.1032***	0.0000	-0.1350***	0.0000
$SPE_{i,t}$	-0.0734***	0.0004	-0.0703***	0.0004
$SPE_{i,t} * X_{i,t-1}$	-0.8859***	0.0000	-0.8390***	0.0000
$SPE_{i,t} * X_{i,t}$	0.9749***	0.0000	1.0826***	0.0000
$SPE_{i,t} * X_{i,3t}$	0.3135***	0.0000	0.3627***	0.0000
$SPE_{i,t} * R_{i,3t}$	-0.0108	0.6807	-0.0185	0.4662
Control Variables	No		Yes	
Adj. R ²	0.1612		0.2299	

4.2 Two Auditors, Audit Firm Industry Specialists and FERC

In order to distinguish the characteristics of the audit firm, lead auditor and concurring auditor industry specialists, we classify the variables and run the following regression models.

$$\begin{aligned}
R_{i,t} = & \alpha_0 + \alpha_1 X_{i,t-1} + \alpha_2 X_{i,t} + \alpha_3 X_{i,3t} + \alpha_4 R_{i,3t} + \alpha_5 ACC1_{i,t} + \alpha_6 ACC1_{i,t} \times X_{i,t-1} \\
& + \alpha_7 ACC1_{i,t} \times X_{i,t} + \alpha_8 ACC1_{i,t} \times X_{i,3t} + \alpha_9 ACC1_{i,t} \times R_{i,3t} + \beta_1 CV_{i,t} \\
& + \beta_2 CV_{i,t} \times X_{i,3t} + \varepsilon_{i,t}
\end{aligned} \tag{2}$$

$$\begin{aligned}
R_{i,t} = & \alpha_0 + \alpha_1 X_{i,t-1} + \alpha_2 X_{i,t} + \alpha_3 X_{i,3t} + \alpha_4 R_{i,3t} + \alpha_5 ACC2_{i,t} + \alpha_6 ACC2_{i,t} \times X_{i,t-1} \\
& + \alpha_7 ACC2_{i,t} \times X_{i,t} + \alpha_8 ACC2_{i,t} \times X_{i,3t} + \alpha_9 ACC2_{i,t} \times R_{i,3t} + \beta_1 CV_{i,t} \\
& + \beta_2 CV_{i,t} \times X_{i,3t} + \varepsilon_{i,t}
\end{aligned} \tag{3}$$

$$\begin{aligned}
R_{i,t} = & \alpha_0 + \alpha_1 X_{i,t-1} + \alpha_2 X_{i,t} + \alpha_3 X_{i,3t} + \alpha_4 R_{i,3t} + \alpha_5 FIRM_{i,t} + \alpha_6 FIRM_{i,t} \times X_{i,t-1} \\
& + \alpha_7 FIRM_{i,t} \times X_{i,t} + \alpha_8 FIRM_{i,t} \times X_{i,3t} + \alpha_9 FIRM_{i,t} \times R_{i,3t} + \beta_1 CV_{i,t} \\
& + \beta_2 CV_{i,t} \times X_{i,3t} + \varepsilon_{i,t}
\end{aligned} \tag{4}$$

In eq. (2)-(4), dependent variable $R_{i,t}$ is the current stock return, and the main explanatory variables are lead auditors, concurring auditor, audit firm $ACC1_{i,t}$, $ACC2_{i,t}$, $FIRM_{i,t}$. $ACC1_{i,t}$ is a dummy variable, which is equal to one if the lead auditor of company i is industry specialist in year t and zero otherwise. $ACC2_{i,t}$ is a dummy variable, which is equal to one if the concurring auditor of company i is industry specialist in year t and zero otherwise. $FIRM_{i,t}$ is a dummy variable, which is equal to one if the company i is audited by industry specialist firm in year t and zero otherwise. $CV_{i,t}$ is the control variable, residual item $\varepsilon_{i,t}$. The detailed definitions of variable are presented in appendix.

If α_8 in eq. (2) and (4) is positive and the former is higher, H1b is supported, indicating that the company which appoint the lead auditor and audit firm to audit are industry specialists, and lead auditor have higher FERC; if α_8 in eq. (3) and (4) is positive and the former is higher, H1c is supported, implying that the company which appoint the concurring auditor and audit firm to audit are industry specialists and concurring auditor has higher FERC; if α_8 in eq. (2) and (3) is positive and the former is higher, H1d is supported, indicating that the company which appoint lead auditor and concurring auditor are industry specialists and lead auditor has higher FERC.

Table 5 presents that three coefficients of cross-multiplying terms ($ACC1_{i,t} \times X_{i,3t}$, $ACC2_{i,t} \times X_{i,3t}$, $FIRM_{i,t} \times X_{i,3t}$) are insignificantly positively (the coefficients are 0.0613, 0.1139, and 0.0297, respectively), suggesting that H1b, H1c, and H1d are not supported. Thus, we do not find that lead auditors have higher FERC than concurring auditors and audit firms industry specialists. In addition, before we add control variables in Model 1, the coefficient of

$FIRM_{i,t} \times X_{i,3t}$ (α_8) is significant positive at the 10% significance level (the coefficient and p-value are 0.0909 and 0.0728, respectively).

Table 5 Regression for Variety of Industry Specialists and FERC

Panel A, Panel B, Panel C present the regression results about lead auditor $ACC1_{i,t}$, concurring auditor $ACC2_{i,t}$, audit firm $FIRM_{i,t}$ respectively. Dependable variable is current stock return $R_{i,t}$. Explanatory variables contain previous EPS $X_{i,t-1}$, current EPS $X_{i,t}$, sum of future EPS $X_{i,3t}$, sum of future stock return $R_{i,3t}$, control variables include company size $SIZE_{i,t}$, loss $LOSS_{i,t}$, standard deviation of NIBT $EARNSTD_{i,t}$, revenue growth rate $GROWTH_{i,t}$. The detailed definitions of variable are presented in appendix. P-value is reported in parentheses. ***, **, and * denote significant at 1%, 5%, and 10% level.

Panel A: Lead Auditor Industry Specialist

Variable	Model 1		Model 2	
	Coefficient	P value	Coefficient	P value
Intercept	0.0985***	0.0000	0.2292***	0.0000
$X_{i,t-1}$	-0.2927***	0.0000	-0.0386	0.3372
$X_{i,t}$	0.7828***	0.0000	0.6728***	0.0000
$X_{i,3t}$	0.1679***	0.0000	0.7888***	0.0000
$R_{i,3t}$	-0.0758***	0.0000	-0.1176***	0.0000
$ACC1_{i,t}$	-0.0078	0.8447	-0.0200	0.6042
$ACC1_{i,t} * X_{i,t-1}$	-0.0001	0.9996	-0.1569	0.5934
$ACC1_{i,t} * X_{i,t}$	-0.3842*	0.0994	-0.1924	0.3924
$ACC1_{i,t} * X_{i,3t}$	0.0245	0.8466	0.0613	0.6160
$ACC1_{i,t} * R_{i,3t}$	0.0082	0.8639	0.0443	0.3350
Control Variable	No		Yes	
Adj. R ²	0.0995		0.1665	

Panel B Concurring Auditor Industry Specialist

Variable	Model 1		Model 2	
	Coefficient	P value	Coefficient	P value
Intercept	0.0981***	0.0000	0.2291***	0.0000
$X_{i,t-1}$	-0.2877***	0.0000	-0.0342	0.3919
$X_{i,t}$	0.7562***	0.0000	0.6562***	0.0000
$X_{i,3t}$	0.1675***	0.0000	0.7924***	0.0000
$R_{i,3t}$	-0.0753***	0.0000	-0.1148***	0.0000
$ACC2_{i,t}$	0.0167	0.7142	0.0032	0.9424
$ACC2_{i,t} * X_{i,t-1}$	-1.4206**	0.0119	-1.4974***	0.0058
$ACC2_{i,t} * X_{i,t}$	1.3608*	0.0559	1.5076**	0.0278
$ACC2_{i,t} * X_{i,3t}$	0.0697	0.7539	0.1139	0.5957
$ACC2_{i,t} * R_{i,3t}$	-0.0444	0.6053	-0.0580	0.4831
Control Variable	No		Yes	

Adj. R ²	0.1005		0.1681	
Panel C Audit Firm Industry Specialist				
	Model 1		Model 2	
Variable	Coefficient	P value	Coefficient	P value
Intercept	0.1024***	0.0000	0.2210***	0.0000
$X_{i,t-1}$	-0.1476***	0.0003	0.1307***	0.0037
$X_{i,t}$	0.6607***	0.0000	0.5250***	0.0000
$X_{i,3t}$	0.1688***	0.0000	0.9726***	0.0000
$R_{i,3t}$	-0.0815***	0.0000	-0.1248***	0.0000
$FIRM_{i,t}$	-0.0240	0.1532	-0.0231	0.1566
$FIRM_{i,t} * X_{i,t-1}$	-0.7314***	0.0000	-0.7313***	0.0000
$FIRM_{i,t} * X_{i,t}$	0.5074***	0.0001	0.6195***	0.0000
$FIRM_{i,t} * X_{i,3t}$	0.0909*	0.0728	0.0297	0.5523
$FIRM_{i,t} * R_{i,3t}$	0.0036	0.8747	0.0175	0.4344
Control Variable	No		Yes	
Adj. R ²	0.1134		0.1798	

4.3. Auditors Amount and Industry Specialists

In order to examine whether investors can distinguish the industry specialists, or just simply hope more specialists audit, we run the following regression.

$$\begin{aligned}
R_{i,t} = & \alpha_1 + \alpha_2 X_{i,t-1} + \alpha_3 X_{i,t} + \alpha_4 X_{i,3t} + \alpha_5 R_{i,3t} + \alpha_6 Count_{i,t} + \alpha_7 Count_{i,t} \times \\
& X_{i,t-1} + \alpha_8 Count_{i,t} \times X_{i,t} + \alpha_9 Count_{i,t} \times X_{i,3t} + \alpha_{10} Count_{i,t} \times R_{i,3t} + \\
& \beta_1 CV_{i,t} + \beta_2 CV_{i,t} \times X_{i,3t} + \varepsilon_{i,t}
\end{aligned} \tag{5}$$

Dependent variable $R_{i,t}$ is the current stock return, and the main explanatory variable is $Count_{i,t}$, which is the amount of industry specialist. $CV_{i,t}$ is the control variable, residual item $\varepsilon_{i,t}$. The detailed definitions of variable are presented in appendix.

If α_8 in eq. (5) is positive, H1e is supported, indicating that FERC is higher when the company appoint more industry specialists to audit. In Table 6, we use the amount of industry specialists to examine whether investors can distinguish these specialists. Empirical result shows that the coefficient of cross-multiplying terms between specialists amount and the sum of future earnings ($Count_{i,t} \times X_{i,3t}$) is significant positively at the 1% significance level (the coefficient and p-value are 0.2228 and 0.0000, respectively), suggesting that H1e is supported. Thus, when the amounts of industry specialists among lead auditors, concurring auditors and audit firms are higher, the companies have higher FERC.

Table 6 Regression for Amount of Industry Specialists and FERC

Dependable variable is current stock return $R_{i,t}$. Explanatory variables contain previous EPS $X_{i,t-1}$, current EPS $X_{i,t}$, sum of future EPS $X_{i,3t}$, sum of future stock return $R_{i,3t}$, amount of industry specialist $Count_{i,t}$, control variables include company size $SIZE_{i,t}$, loss $LOSS_{i,t}$, standard deviation of NIBT $EARNSTD_{i,t}$, revenue growth rate $GROWTH_{i,t}$. The detailed definitions of variable are presented in appendix. P-value is reported in parentheses. ***, **, and * denote significant at 1%, 5%, and 10% level.

Variable	Model 1		Model 2	
	Coefficient	P value	Coefficient	P value
Intercept	0.1316***	0.0000	0.2307***	0.0000
$X_{i,t-1}$	-0.0964**	0.0341	0.1523***	0.0014
$X_{i,t}$	0.3140***	0.0000	0.2391***	0.0009
$X_{i,3t}$	0.0637**	0.0233	0.7193***	0.0000
$R_{i,3t}$	-0.0706***	0.0001	-0.0928***	0.0000
$Count_{i,t}$	-0.0280***	0.0001	-0.0250***	0.0003
$Count_{i,t} * X_{i,t-1}$	-0.3911***	0.0000	-0.3352***	0.0000
$Count_{i,t} * X_{i,t}$	0.4131***	0.0000	0.3991***	0.0000
$Count_{i,t} * X_{i,3t}$	0.1849***	0.0000	0.2228***	0.0000
$Count_{i,t} * R_{i,3t}$	-0.0304***	0.0039	-0.0400***	0.0001
Control Variable	No		Yes	
Adj. R ²	0.1602		0.2274	

4.4 Two Auditors Industry Experience and FERC

Although they are all industry specialists, the size of audit firm, brand reputation, accountant's gender, different combination of auditors, audit tenure and specific industry experience provide different audit quality. In this paper, we compare the impacts of specific industry experience and industry specialist' experience on current return in the following regression.

$$\begin{aligned}
 R_{i,t} = & \alpha_0 + \alpha_1 X_{i,t-1} + \alpha_2 X_{i,t} + \alpha_3 X_{i,3t} + \alpha_4 R_{i,3t} + \alpha_5 CEXP1_{i,t} + \alpha_6 CEXP1_{i,t} \\
 & \times X_{i,t-1} + \alpha_7 CEXP1_{i,t} \times X_{i,t} + \alpha_8 CEXP1_{i,t} \times X_{i,3t} + \alpha_9 CEXP1_{i,t} \times R_{i,3t} \\
 & + \beta_1 CV_{i,t} + \beta_2 CV_{i,t} \times X_{i,3t} + \varepsilon_{i,t}
 \end{aligned} \tag{6}$$

$$\begin{aligned}
 R_{i,t} = & \alpha_0 + \alpha_1 X_{i,t-1} + \alpha_2 X_{i,t} + \alpha_3 X_{i,3t} + \alpha_4 R_{i,3t} + \alpha_5 CEXP2_{i,t} + \alpha_6 CEXP2_{i,t} \\
 & \times X_{i,t-1} + \alpha_7 CEXP2_{i,t} \times X_{i,t} + \alpha_8 CEXP2_{i,t} \times X_{i,3t} + \alpha_9 CEXP2_{i,t} \times R_{i,3t} \\
 & + \beta_1 CV_{i,t} + \beta_2 CV_{i,t} \times X_{i,3t} + \varepsilon_{i,t}
 \end{aligned} \tag{7}$$

$$\begin{aligned}
 R_{i,t} = & \alpha_0 + \alpha_1 X_{i,t-1} + \alpha_2 X_{i,t} + \alpha_3 X_{i,3t} + \alpha_4 R_{i,3t} + \alpha_5 SPE1Y_{i,t} + \alpha_6 SPE1Y_{i,t} \\
 & \times X_{i,t-1} + \alpha_7 SPE1Y_{i,t} \times X_{i,t} + \alpha_8 SPE1Y_{i,t} \times X_{i,3t} + \alpha_9 SPE1Y_{i,t} \times R_{i,3t}
 \end{aligned}$$

$$+\beta_1 CV_{i,t} + \beta_2 CV_{i,t} \times X_{i,3t} + \varepsilon_{i,t} \quad (8)$$

$$R_{i,t} = \alpha_0 + \alpha_1 X_{i,t-1} + \alpha_2 X_{i,t} + \alpha_3 X_{i,3t} + \alpha_4 R_{i,3t} + \alpha_5 SPE2Y_{i,t} + \alpha_6 SPE2Y_{i,t} \\ \times X_{i,t-1} + \alpha_7 SPE2Y_{i,t} \times X_{i,t} + \alpha_8 SPE2Y_{i,t} \times X_{i,3t} + \alpha_9 SPE2Y_{i,t} \times R_{i,3t} \\ + \beta_1 CV_{i,t} + \beta_2 CV_{i,t} \times X_{i,3t} + \varepsilon_{i,t} \quad (9)$$

In eq. (6)-(9), dependent variable $R_{i,t}$ is the current stock return, and the main explanatory variables are $CEXP1_{i,t}$, $CEXP2_{i,t}$, $SPE1Y_{i,t}$, $SPE2Y_{i,t}$. $CV_{i,t}$ is the control variable, residual item $\varepsilon_{i,t}$. The detailed definitions of variable are presented in appendix.

If α_8 in eq. (6) is positive, H2a is supported, indicating that the companies have higher FERC when the lead auditors have higher industry experience. If α_8 in eq. (7) is positive, H2b is supported, implying that companies have higher FERC when the concurring auditors have high industry experience. If α_8 in eq. (8) is positive, H2c is accepted, indicating that companies have higher FERC when the lead auditors are industry specialists with high experience. If α_8 in eq. (9) is positive, H2d is accepted, implying that companies have higher FERC when the concurring auditors are industry specialist with high experience.

In Table 7, we examine whether the company has higher FERC when audited by accountants with longer industry experience. Empirical results of Panel A show the coefficient of industry experience of the lead auditors and sum of future earnings cross-multiplying terms ($CEXP1_{i,t} \times X_{i,3t}$) is significant negative at the 1% significance level (the coefficient and p-value are -0.0142 and 0.0001, respectively), which does not support hypothesis H2a. Thus, company audited by lead auditors with higher industry experience has lower FERC. Panel B present the coefficient of industry experience of the concurring auditors and sum of future earnings cross-multiplying terms ($CEXP2_{i,t} \times X_{i,3t}$) is significantly positive at the 5% significance level (the coefficient and p-value are 0.0109 and 0.0142, respectively), which supports H2b. It indicates that company audited by concurring auditors with higher industry experience has higher FERC. Empirical results of Panels C and D show two coefficients of cross-multiplying terms ($SPE1Y_{i,t} \times X_{i,3t}$, $SPE2Y_{i,t} \times X_{i,3t}$) are significantly positive (the coefficients are 0.0252 and 0.0345), suggesting that H2c and H2d are supported. Thus, the companies have higher FERC when accountants are industry specialists with higher industry experience. Similar with Chen et al. (2016), we find that no matter on the firm level or accountant level, higher industry experience has positive effects on learnings curve and improves the audit quality, making the financial statement less likely to be restated. Lead auditors won't reflect the effect of experience after we add the condition of industry specialist to this article, and the audit quality will also enhance over time. After we consider the condition of industry specialist, lead auditors can reflect the effect of experience and the audit quality also enhance over time.

Table 7 Regression for Industry Experience and FERC

Panel A, Panel B, Panel C, Panel D present the regression results about lead auditor experience, concurring auditor experience, lead auditor specialist experience, concurring auditor specialist experience, respectively. Dependable variable is current stock return $R_{i,t}$. Explanatory variables contain previous EPS $X_{i,t-1}$, current EPS $X_{i,t}$, sum of future EPS $X_{i,3t}$, sum of future stock return $R_{i,3t}$, control variables include company size $SIZE_{i,t}$, loss $LOSS_{i,t}$, standard deviation of NIBT $EARNSTD_{i,t}$, revenue growth rate $GROWTH_{i,t}$. The detailed definitions of variable are presented in appendix. P-value is reported in parentheses. ***, **, and * denote significant at 1%, 5%, and 10% level.

Panel A Lead Auditor Experience

Variable	Model 1		Model 2	
	Coefficient	P value	Coefficient	P value
Intercept	0.1105***	0.0000	0.2256***	0.0000
$X_{i,t-1}$	-0.1269**	0.0151	0.0862	0.1066
$X_{i,t}$	1.1133***	0.0000	1.0334***	0.0000
$X_{i,3t}$	0.2644***	0.0000	0.8902***	0.0000
$R_{i,3t}$	-0.1632***	0.0000	-0.2035***	0.0000
$CEXP1_{i,t}$	0.0000	0.9768	0.0011	0.4019
$CEXP1_{i,t} * X_{i,t-1}$	-0.0400***	0.0000	-0.0247***	0.0003
$CEXP1_{i,t} * X_{i,t}$	-0.0342***	0.0004	-0.0364***	0.0001
$CEXP1_{i,t} * X_{i,3t}$	-0.0057*	0.0859	-0.0142***	0.0001
$CEXP1_{i,t} * R_{i,3t}$	0.0087***	0.0000	0.0087***	0.0000
Control Variables	No		Yes	
Adj. R ²	0.1185		0.1838	

Panel B Concurring Auditor Experience

Variable	Model 1		Model 2	
	Coefficient	P value	Coefficient	P value
Intercept	0.0936***	0.0000	0.1770***	0.0001
$X_{i,t-1}$	0.4342***	0.0000	0.7285***	0.0000
$X_{i,t}$	0.0604	0.4872	-0.1541*	0.0725
$X_{i,3t}$	0.1214***	0.0037	1.0094***	0.0000
$R_{i,3t}$	-0.0498**	0.0108	-0.0881***	0.0000
$CEXP2_{i,t}$	0.0004	0.7742	-0.0001	0.9083
$CEXP2_{i,t} * X_{i,t-1}$	-0.1047***	0.0000	-0.1077***	0.0000
$CEXP2_{i,t} * X_{i,t}$	0.0948***	0.0000	0.1061***	0.0000
$CEXP2_{i,t} * X_{i,3t}$	0.0074	0.1059	0.0109**	0.0142
$CEXP2_{i,t} * R_{i,3t}$	-0.0032	0.0927	-0.0039**	0.0332
Control Variables	No		Yes	

Adj. R ²	0.1381		0.2114	
Panel C Lead Auditor Specialist Experience				
	Model 1		Model 2	
Variable	Coefficient	P value	Coefficient	P value
Intercept	0.1127***	0.0000	0.2259***	0.0000
$X_{i,t-1}$	-0.2730***	0.0000	-0.0234	0.5760
$X_{i,t}$	0.7309***	0.0000	0.6425***	0.0000
$X_{i,3t}$	0.1244***	0.0000	0.7175***	0.0000
$R_{i,3t}$	-0.0836***	0.0000	-0.1177***	0.0000
$SPE1Y_{i,t}$	-0.0038***	0.0033	-0.0031**	0.0132
$SPE1Y_{i,t} * X_{i,t-1}$	-0.0315***	0.0007	-0.0232***	0.0096
$SPE1Y_{i,t} * X_{i,t}$	0.0162***	0.0015	0.0143	0.1107
$SPE1Y_{i,t} * X_{i,3t}$	0.0230***	0.0000	0.0252***	0.0000
$SPE1Y_{i,t} * R_{i,3t}$	-0.0008	0.6896	-0.0016	0.3925
Control Variable	No		Yes	
Adj. R ²	0.1084		0.1756	

Panel D Concurring Auditor Specialist Experience				
	Model 1		Model 2	
Variable	Coefficient	P value	Coefficient	P value
Intercept	0.1003***	0.0000	0.2086***	0.0000
$X_{i,t-1}$	-0.1888***	0.0000	0.0628	0.1279
$X_{i,t}$	0.5026***	0.0000	0.4136***	0.0000
$X_{i,3t}$	0.1439***	0.0000	0.8181***	0.0000
$R_{i,3t}$	-0.0656***	0.0000	-0.0995***	0.0000
$SPE2Y_{i,t}$	-0.0016	0.2028	-0.0017	0.1774
$SPE2Y_{i,t} * X_{i,t-1}$	-0.0791***	0.0000	-0.0669***	0.0000
$SPE2Y_{i,t} * X_{i,t}$	0.0774***	0.0000	0.0733***	0.0000
$SPE2Y_{i,t} * X_{i,3t}$	0.0311***	0.0000	0.0345***	0.0000
$SPE2Y_{i,t} * R_{i,3t}$	-0.0082***	0.0000	-0.0094***	0.0000
Control Variable	No		Yes	
Adj. R ²	0.1416		0.2075	

4.5 Information Asymmetry and FERC

We use market value as the proxy for information asymmetry to examine whether the companies with low degree of information asymmetry have higher FERC. The regression model is as follows:

$$R_{i,t} = \alpha_0 + \alpha_1 X_{i,t} + \alpha_2 X_{i,t-1} + \alpha_3 X_{i,3t} + \alpha_4 R_{i,3t} + \alpha_5 MV_{i,t} + \alpha_6 MV_{i,t} \times X_{i,t-1} \\ + \alpha_7 MV_{i,t} \times X_{i,t} + \alpha_8 MV_{i,t} \times X_{i,3t} + \alpha_9 MV_{i,t} \times R_{i,3t} + \beta_1 CV_{i,t} + \beta_2 CV_{i,t} \times X_{i,3t}$$

$$+\varepsilon_{i,t} \tag{10}$$

Dependent variable $R_{i,t}$ is the current stock return and the main explanatory variable is market value $MV_{i,t}$. $CV_{i,t}$ is the control variable, and residual item $\varepsilon_{i,t}$. The detailed definitions of variable are presented in appendix. If α_8 in eq. (10) is positive, H3 is supported. Table 8 present that the coefficient of cross-multiplying terms between market value and sum of future earnings cross-multiplying terms ($MV_{i,t} \times X_{i,3t}$) is significant positively at the 1% significance level (the coefficient and p-value are 0.2653 and 0.0004, respectively), suggesting that H3 is supported. Thus, the companies with larger market value have lower information asymmetry and higher FERC.

Table 8 Regression for Information Asymmetry and FERC

Dependable variable is current stock return $R_{i,t}$. Explanatory variables contain previous EPS $X_{i,t-1}$, current EPS $X_{i,t}$, sum of future EPS $X_{i,3t}$, sum of future stock return $R_{i,3t}$, market value $MV_{i,t}$, control variables include company size $SIZE_{i,t}$, loss $LOSS_{i,t}$, standard deviation of NIBT $EARNSTD_{i,t}$, revenue growth rate $GROWTH_{i,t}$. The detailed definitions of variable are presented in appendix. P-value is reported in parentheses. ***, **, and * denote significant at 1%, 5%, and 10% level.

Variable	Model 1		Model 2	
	Coefficient	P value	Coefficient	P value
Intercept	0.0813***	0.0000	0.3700***	0.0000
$X_{i,t-1}$	0.2040***	0.0000	0.0160	0.7015
$X_{i,t}$	0.4188***	0.0000	0.2828***	0.0000
$X_{i,3t}$	0.1623***	0.0000	1.4964***	0.0000
$R_{i,3t}$	-0.0698***	0.0000	-0.1057***	0.0000
$MV_{i,t}$	0.0106	0.5050	0.0814***	0.0001
$MV_{i,t} * X_{i,t-1}$	-0.4788***	0.0000	-0.4028***	0.0001
$MV_{i,t} * X_{i,t}$	1.1902***	0.0000	1.1042***	0.0000
$MV_{i,t} * X_{i,3t}$	-0.0597	0.1492	0.2653***	0.0004
$MV_{i,t} * R_{i,3t}$	0.0107	0.6274	0.0068	0.7558
Control Variable	No		Yes	
Adj. R ²	0.1271		0.2047	

5. Conclusion

The brand effect of the audit firm and industry specialists have been the popular issues in the past literature about the solution to improve audit quality. Audit quality can inhibit the company's earnings management, thereby improving the company's earnings quality. Industry specialists verify the company's recent operations and financial performance. Investors can use

these informative financial statements to know the company's future prospects and investment value to form the best investing strategies. Based on Lundholm and Myers (2002), we analyze whether audition of industry specialists, and industry experience can help the investors predict future earnings and reflect future earnings information on the current stock price.

We use Taiwan Listed and OTC companies during 2013 to 2016 as the sample. Empirical results show that companies audited by industry specialists have higher FERCs than companies audited by non-industry specialists. Comparing the companies with the lead auditor, concurring auditor, and the firm are industry specialists, we do not find that FERC of the companies with the lead auditor has higher than the concurring auditor and audit firm. FERC of the companies with higher amount of industry specialists are higher. Therefore, investors prefer more industry specialists audit. When the lead auditor or concurring auditor has higher industry experience, we find FERC of the companies with concurring auditor industry specialists are higher. When lead auditor or concurring auditor who are industry specialists have higher industry experience, FERC of the companies are higher. We use market value as the proxy of information asymmetry. When the company's market value is larger, the degree of the company's information asymmetry is lower, and its FERC is higher. Industry specialists can improve the company's future earnings, provide high quality financial statements, and solve the instability in the early stage of the new auditor appointment.

From the above findings, several possible directions for future research are identified. First, probability of information-based trading (PIN) can also be used as the proxy of information asymmetry. Second, non-Big 4 industry specialists can be added to the sample.

Appendix :

Variable Name	Variable	Definition
Current Stock Return	$R_{i,t}$	Stock return of company i in year t
Previous EPS	$X_{i,t-1}$	Company i (year t-1 EPS/year t Beginning stock price)
Current EPS	$X_{i,t}$	Company i (year t EPS/year t Beginning stock price)
Sum of Future Earnings	$X_{i,3t}$	Sum of Company i EPS from t+1 to t+3 divided by year t stock price
Sum of Stock Return	$R_{i,3t}$	Sum of company i stock return from year t+1 to t+3
Extended Industry Specialist	$SPE_{i,t}$	Takes a value of 1 if one of company i auditors or audit firm is industry specialist, 0 otherwise
Lead Auditor Specialist	$ACC1_{i,t}$	Takes a value of 1 if only lead auditor is industry specialist, 0 otherwise
Concurring Auditor Specialist	$ACC2_{i,t}$	Takes a value of 1 if only concurring auditor is industry specialist, 0 otherwise
Audit Firm Specialist	$FIRM_{i,t}$	Takes a value of 1 if only audit firm is industry specialist, 0 otherwise
Amount of Industry Specialist	$Count_{i,t}$	Amount of industry specialists for company i in year t
Lead Auditor Experience	$CEXP1_{i,t}$	Company i in year t lead auditor accumulated specific industry experience
Concurring Auditor Experience	$CEXP2_{i,t}$	Company i in year t concurring auditor accumulated specific industry experience
Lead Auditor Specialist Experience	$SPE1Y_{i,t}$	Company i in year t lead auditor specialist accumulated specific industry experience
Concurring Auditor Specialist Experience	$SPE2Y_{i,t}$	Company i in year t concurring auditor specialist accumulated specific industry experience
Market Value	$MV_{i,t}$	Company i in year t market capitalization
Company Size	$SIZE_{i,t}$	Natural log of total assets in year t
Loss	$LOSS_{i,t}$	Takes a value of 1 if $X_{i,3t}$ is positive and 0 otherwise
Revenue Growth Rate	$GROWTH_{i,t}$	Company i in year t (Current NIBT- Previous NIBT)/Previous NIBT
Standard Deviation of NIBT	$EARNSTD_{i,t}$	Standard deviation of NIBT for company i from year t to year t+3 / beginning total asset

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