

# How Does the Average Salary of Non-managerial Employees Affect Company Audit Fees?

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**Abstract:** This study examines the relationship between the average salary of non-managerial employees and audit fees for Taiwan publicly listed companies in 2019-2022. This period is significant due to the introduction of a new regulation mandating the disclosure of average salary of non-managerial employees' information, a move by the Financial Supervisory Commission designed to enhance corporate transparency. Prior research, predominantly focusing on executive compensation, has overlooked this potentially important factor affecting audit pricing. The research uses data from Taiwan listed companies in 2019-2022, excluding financial and insurance firms. Empirical results indicate a significant positive correlation between the average salary of non-managerial employees and audit fees, suggesting that higher salaries are associated with higher audit fees. This effect is more pronounced for companies audited by Big Four firms, where the positive relationship is statistically significant. This finding supports that higher the average salary of non-managerial employees might reflect greater operational complexity, higher risk profiles, and thus, a greater need for more extensive and costly audit procedures. The higher fees charged by Big Four firms might also be attributed to their superior reputation and brand strength, leading to a perceived premium for their audit services. Conversely, the relationship is less evident for companies audited by non-Big Four firms, implying a possible differential effect based on the auditor's reputation and market position.

**Key words:** audit fees, the average salary of non-managerial employees, big four firms

**JEL codes:** M, M4

## 1. Introduction

The examination of wage levels has been a significant focus in economic theory, with particular attention given to disparities at various company hierarchies. Tournament theory has been prominently utilized to explain the existence of wage differentials based on rank, positing that increased competition among employees typically leads to wider wage gaps. It is common for companies to see wage discrepancies influenced by job responsibilities, gender, age, and educational attainment, with those having advanced degrees and extensive work experience generally commanding higher salaries. Enhancing transparency concerning the salaries of entry-level employees is a critical initial step towards mitigating low wage issues and holds considerable implications for both employers and employees. The availability of public salary data can instigate industry-wide comparisons, offering potential

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employees clear standards as they navigate the job market. In today's landscape, where information transparency is paramount, business competition encompasses more than just strategic planning.

This research seeks to assess whether the wages of non-management employees have a bearing on audit fees and whether these wages serve as effective motivators for improved employee performance. The hypothesis suggests that if higher wages are observed among senior staff, it could signal a larger and riskier corporate structure, necessitating greater auditor involvement and consequently leading to increased audit fees. In Taiwan, where low wages present a critical challenge, recognizing employees as essential assets is paramount. Prior investigations predominantly linked executive pay to corporate performance metrics. Since 2019, the Taiwan Stock Exchange has mandated the disclosure of compensation particulars for non-management full-time staff, yet the correlation between these wages and audit fees remains unexplored.

Focusing on Taiwan's publicly traded companies in 2019, excluding the financial and insurance sectors, this study investigates the potential link between elevated non-managerial wages and the presence of larger, more intricate organizational structures that might incur higher audit expenses. Additionally, the study probes how audits conducted by Big Four firms, along with industry norms and geographic factors, influence executive pay and whether these dynamics promote heightened employee motivation and improved performance. This ultimately leads to superior professional auditing services and potential audit fee premiums.

The methodology involves categorizing the sample companies based on whether they are audited by Big Four or non-Big Four firms, to discern the impact of salary disparities on audit fees. It is posited that significant salary divides might signal financial risk premiums, permitting accountancy firms to capitalize on their brand standing to denote superior audit quality, thereby justifying elevated audit fees. This suggests that Big Four audit services are valued, prompting companies to consent to higher fees. Further segmentation of the sample by industry patterns allows for a nuanced analysis of how these factors influence the link between executive compensation and non-managerial salaries' effects on audit fees.

Ultimately, the research underlines that heightened audit risks demand increased time for auditor-client interactions. Such conditions might prompt managers' remuneration structures to exacerbate earnings manipulation risks, which auditors invariably factor into their audit fee assessments, potentially resulting in higher fees.

## **2. Literature Review**

Audit fees are established through a negotiation process between auditors and clients, where numerous factors from both demand and supply sides influence the final amount. Empirical research has consistently highlighted how characteristics on the demand side impact audit fees. Key determinants include company size, operational complexity, required work hours, professional expertise, historical fee benchmarks, and the business scale and financial condition of the client (Hay et al., 2006; Cobbin, 2002; Simunic, 1984). These elements contribute to the complexity of a company's transactions, which is a primary factor in determining audit fees. Since audit quality is not directly observable, accounting firms leverage their brand and reputation to signal higher audit quality, justifying their ability to charge premium fees. Literature suggests that companies with higher agency costs tend to select Big Four audit firms to attain superior audit quality, thus incurring higher audit fees to mitigate these costs.

Research has shown that both the size of accounting firms and the industry expertise of auditors significantly

influence audit fees (Causholli et al., 2011; Hay, 2011). Large accounting firms, known for providing high-quality audits due to their strong brand reputation and reduced economic reliance on individual clients, are able to command higher fees (Choi et al., 2010b; Craswell et al., 1995; Becker et al., 1998). In Taiwan, such firms benefit from an audit fee premium. The provision of both auditing and non-auditing services leads to knowledge spillovers, enhancing audit efficiency and judgment, thereby improving audit quality.

Executive compensation remains a focal point in capital markets, given its implications for social equity and its influence on corporate resource allocation (Lazear and Rosen 1981; Jensen and Meckling 1976). As a core element of corporate governance, an effective compensation system attracts and retains top talent, boosts employee morale, and improves productivity. Through the 2018-2020 Corporate Governance Blueprint and Implementation Plan, Taiwan's Financial Supervisory Commission aimed to deepen corporate governance through five key areas: corporate governance culture, board effectiveness, information transparency, shareholder engagement, and regulatory compliance. As part of these efforts, the Taiwan Stock Exchange began disclosing information on employee benefits and non-managerial salaries to enhance governance disclosure quality and reinforce social responsibility.

Lazear and Rosen (1981) introduced tournament theory to elucidate internal corporate salary structures. This model suggests that pay differentials motivate employees by incentivizing effort levels, particularly within senior management. Rosen (1986) underscored the theory's empirical value, suggesting that significant within the executive ranks motivate maximum effort in pursuit of higher compensation upon promotion.

Numerous studies have validated the impact of pay disparities on management effort and company performance. Research by Eriksson (1999) and Leonard (1990), among others, demonstrated the positive effects of applying tournament theory in designing compensation structures. Bloom and Michel (2002) found that greater pay dispersion reduces employee turnover and promotes diligence, while Wright et al. (2005) showed that larger salary differences improve company performance. In this context, how does the average salary of non-managerial employees affect company audit fees, ultimately benefiting organizational performance.

### 3. Research Method

#### 3.1 Sample Selection

Data collection for this analysis involved two principal sources. The first source was the Market Observation Post System, from 2019 to 2021. The second source was the Taiwan Economic Journal financial database.

Table 1 outlines sample distribution by industry and accounting firm type. Results reveal that 81.51% of the samples were audited by the Big Four accounting firms. Additionally, 38.30% (1,013 of 2,645) of 2021.

Table 1 Sample Distribution

Big Four firms and Non-Big Four firms			
Accounting Firms Year	Big Four firms	Non-Big Four firms	Total
2019	620 (23.44%)	129 (4.88%)	749 (28.32%)
2020	712 (26.92%)	171 (6.47%)	883 (33.38%)
2021	824 (31.15%)	189 (7.15%)	1,013 (38.30%)
<b>Total</b>	<b>2,156(81.51%)</b>	<b>489 (18.49%)</b>	<b>2,645(100%)</b>

### 3.2 Research Design and Empirical Proxies

#### 3.2.1 Empirical models

Previous studies on audit fees often use the natural logarithm of audit fees to address non-linear relationships and heteroscedasticity (Whisenant et al., 2003). Adopting this method, this study explores whether higher average salary of non-managerial employees in Taiwan listed firms correlate with increased company scale and complexity, necessitating greater auditor effort and potentially higher audit fees. Utilizing an Ordinary Least Squares (OLS) regression model, the analysis sets the natural logarithm of audit fee amounts ( $LAccAF$ ) as the dependent variable and average salary of non-managerial employees ( $NEC$ ) as the independent variable. The study aims to provide insights into how employee compensation impacts auditing costs. The regression model is outlined as follows:

$$LAccAF_{i,t} = \beta_0 + \beta_1 ANEC_{i,t} + \beta_2 Hold_{i,t} + \beta_3 Control_{i,t} + \beta_4 CATA_{i,t} + \beta_5 DF_{i,t} + \beta_6 SIZE_{i,t} + \varepsilon_{i,t} \quad (1)$$

where:

$LACCAF$  = Audit fees;

$NEC$  = Average Salary of Non-managerial Employees;

$Hold$  = Managerial ownership ratio;

$Control$  = Board control ratio;

$CATA$  = Current ratio;

$DE$  = Debt ratio;

$SIZE$  = Company size;

$\varepsilon$  = Error term.

### 3.3 Related Variables and Operational Definitions

#### 3.3.1 Dependent Variable: Audit Fees ( $LACCAF$ )

The determination of audit fees primarily considers supply-side factors, including auditor characteristics, while demand-side factors focus on the audited companies' attributes, such as size, operational complexity, and financial condition. Hay et al. (2006) found a positive relationship between client size, risk, complexity, and audit fees. Thus, higher average salary of non-managerial employees may suggest greater compensation for senior employees, indicative of larger client size, increased risk, and complexity. These factors require more auditor effort and potentially elevate audit fees. Therefore, this study expects a positive coefficient for average salary of non-managerial employees ( $NEC$ ).

#### 3.3.2 Independent Variable: Average Salary of Non-Managerial Employees ( $NEC$ )

To improve corporate governance information disclosure and enhance social responsibility, the Financial Supervisory Commission established a dedicated section on the Market Observation Post System in late June 2019. This section, titled "Corporate Social Responsibility-related Information/Employee Benefits and Salary Statistics/Full-time Non-managerial Employee Salary Information," mandates listed companies to disclose salary data for full-time non-managerial employees. This requirement aligns with international salary disclosure standards, such as those in the U.S. and U.K., and considers feedback from listed companies and practical operations.

#### 3.3.3 Control Variables

To accurately estimate the relationship between audit fees and various factors, this paper includes several control variables based on prior research: manager ownership ratio ( $Hold$ ), board control ratio ( $Control$ ), current ratio ( $CATA$ ), debt ratio ( $DE$ ), and company size ( $SIZE$ ).

## 4. Empirical Results

### 4.1 Descriptive Statistics

Table 2 provides a descriptive analysis comparing companies audited by the Big Four firms (n=2,156) and those by non-Big Four firms (n = 489). It reveals that Big Four-audited companies incur higher audit fees (LACCAF). Additionally, Big Four-audited companies exhibit higher average salary of non-managerial employees (NEC), larger company size (SIZE). These findings suggest that Big Four-audited companies typically offer greater senior position compensation and involve larger, more complex client operations, requiring auditors to invest more effort, thereby justifying increased audit fees.

### 4.2 Correlation Matrix

Table 3 outlines the Pearson correlation coefficients between the dependent and independent variables, as well as among the independent variables. A significant positive correlation exists between audit fees (LACCAF) and average salary of non-managerial employees (NEC), with a coefficient of 0.31, indicating companies' willingness to pay higher audit fees. For control variables, there are notable negative correlations between audit fees and board control ratio (Control, 0.10), current ratio (CATA, -0.32) and debt ratio (DE, 0.21).

Table 2 Descriptive Statistics

	Total sample				Big Four firms				Non-Big Four firms		
Variables	Mean	Median	Std. Dev		Mean	Median	Std. Dev		Mean	Median	Std. Dev
<i>LACCAF</i>	14.89	14.90	0.58		14.96	14.92	0.55		14.60	14.59	0.49
<i>NEC</i>	14.82	14.75	0.98		14.80	14.80	0.99		14.45	14.46	0.90
<i>Hold</i>	0.07	0.02	0.03		0.02	0.01	0.03		0.02	0.03	0.07
<i>Control</i>	0.33	0.30	0.18		0.32	0.30	0.16		0.32	0.30	0.19
<i>CATA</i>	2.91	1.92	3.53		2.85	1.92	3.64		3.10	1.97	2.83
<i>DE</i>	0.43	0.43	0.18		0.43	0.43	0.16		0.43	0.46	0.20
<i>SIZE</i>	15.46	15.23	1.49		15.51	15.28	1.50		15.12	15.01	2.58

Table 3 Correlation Matrix

Variables <sup>a</sup>	<i>LACCAF</i>	<i>NEC</i>	<i>Hold</i>	<i>CATA</i>	<i>Control</i>	<i>DE</i>	<i>SIZE</i>
<i>LACCAF</i>	1.00						
<i>NEC</i>	0.31	1.00					
<i>Hold</i>	0.56	0.41*	1.00				
<i>Control</i>	0.19*	0.09	0.16*	1.00			
<i>CATA</i>	-0.32*	-0.12	-0.31*	-0.56*	1.00		
<i>DE</i>	0.21*	-0.09	0.22*	0.26	-0.08	1.00	
<i>SIZE</i>	0.13	0.06	-0.23*	0.12	-0.23	0.05	1.00

<sup>a</sup> Pearson correlations in the lower diagonal. \* Indicates significance at the 5 percent level.

### 4.3 Multivariate Analysis

#### 4.3.1 Average Salary of Non-Managerial Employees and Audit Fees

This paper explores the relationship between average salary of non-managerial employees and audit fees using samples from both Big Four and non-Big Four audited firms. Results show a significantly positive

coefficient for average salary of non-managerial employees (NEC) at 0.051 ( $t = 4.15$ ,  $p < 0.05$ ), implying that higher salaries are associated with higher audit fees, reflecting auditors' need for more extensive procedures. The study further examines if this effect varies between Big Four and non-Big Four firms. For companies audited by Big Four firms, the coefficient is 0.057 ( $t = 2.88$ ,  $p < 0.01$ ), significant at the 1% level with an adjusted  $R^2$  of 47.82%, indicating strong explanatory power for audit fees without significant omitted variable issues. In contrast, for non-Big Four firms positive but not significant, suggesting the Big Four's reputational advantage influences audit fee valuation. Control variables such as current ratio (CATA), company size (SIZE), debt ratio (DE), are all significant, indicating that more complex and financially risky companies with better governance and lower short-term debt capacity require extensive audit procedures, leading to higher audit fees.

**Table 4 Average Salary of Non-Managerial Employees and Audit Fees**

Variables	Pred. Sign	Total sample			Big 4 accounting firms			Non-Big 4 accounting firms	
		Coef.	t-value <sup>a</sup>		Coef.	t-value		Coef.	t-value
<b>CONSTANT</b>		10.899	47.56**		11.074	41.14***		12.41.	20.15***
<b>NEC</b>	+	0.051	4.15**		0.059	2.61***		0.345	0.52
<b>Hold</b>	?	0.224	22.41***		0.231	21.74***		0.104	5.04***
<b>Control</b>	?	0.250	1.74		0.241	1.52*		-0.057	-1.56
<b>CATA</b>	?	-0.127	-3.47		-0.041	-1.86*		-0.321	-2.89***
<b>DE</b>	?	-0.268	-1.22		-0.053	-1.13		-0.412	-0.34
<b>SIZE</b>	?	-0.750	-2.74		-0.354	-1.71		-4.365	-2.55***
<b>Adj. R<sup>2</sup></b>		43.74%			47.82%			32.51%	
<b>Nobs.</b>		2,645			2,156			489	

<sup>a</sup> Asterisks \*, \*\*, \*\*\* indicate two-tailed significance at the 0.10, 0.05, and 0.01 levels, respectively.

**Table 5 Average Salary of Non-Managerial Employees and Audit Fees: Divide KPMG, PwC, Deloitte, and Ernst & Young**

Variables	Pred. Sign	PwC			KPMG			Deloitte			EY	
		Coef.	t-value <sup>a</sup>		Coef.	t-value		Coef.	t-value		Coef.	t-value
<b>CONSTANT</b>		12.13	31.74***		12.34	4.12**		10.96	14.96**		11.05	25.97***
<b>NEC</b>	+	0.12	2.27		0.12	0.45**		0.03	0.11		-0.04	-1.77
<b>Hold</b>	?	0.15	14.25**		0.13	2.38**		0.21	5.76		0.41	14.74***
<b>Control</b>	?	0.32	2.36*		0.23	2.69		0.12	0.85**		-0.42	-1.97*
<b>CATA</b>	?	-0.01	-0.83		-0.09	-0.81		-0.11	-1.73		-0.02	-1.65*
<b>DE</b>	?	0.27	-0.72		0.81	-0.56		0.256	1.88		-0.27	-1.71**
<b>SIZE</b>	?	-0.61	-1.36		-9.83	-0.74		2.24	1.74		-0.81	-1.74
<b>Adj. R<sup>2</sup></b>		33.68%			50.74%			28.74%			48.29%	
<b>Nobs.</b>		612			436			728				380

<sup>a</sup> Asterisks \*, \*\*, \*\*\* indicate two-tailed significance at the 0.10, 0.05, and 0.01 levels, respectively.

#### 4.3.2 Average Salary of Non-Managerial Employees and Audit Fees: Divide PwC, KPMG, Deloitte, and Ernst & Young

This study divides the Big Four sample into four subsamples In Table 5: PwC, KPMG, Deloitte, and EY, to assess differences in discretionary accruals among companies audited by these firms. Table 5 presents the results,

showing that only companies audited by KPMG incur higher audit fees, suggesting these firms place greater trust in KPMG's audit quality.

## 5. Conclusions

In 2019, Taiwan's Financial Supervisory Commission required listed companies to disclose employee salaries, including non-managerial positions, enhancing transparency across both high and low-paying firms. This regulation reflects the growing emphasis on information transparency, extending competition beyond strategic aspects. Notably, no previous research in Taiwan has examined the impact of non-managerial salaries on audit fees. This study focuses on Taiwan listed companies in 2019 (excluding financial and insurance sectors) to analyze whether non-managerial salaries incentivize employees and enhance performance, suggesting the compensation system may reward senior employees with higher pay. It also investigates if larger company size, higher risk, and greater complexity require more audit resources, increasing audit fees.

Initial findings indicate that companies audited by Big Four firms, which pay higher salaries to both executives and non-managerial staff, tend to incur higher audit fees. This reflects a premium for financial risk and specialized expertise and highlights the Big Four's superior reputation and brand strength in audit quality, justifying the higher fees.

Starting in 2019, Taiwan listed companies reported "full-time non-managerial employees" salaries for 2018, and from 2020, included "median" salary disclosures. This has improved the relevance and comparability of salary statistics. Consequently, the study suggests that Taiwan regulators consider further disclosures on factors like gender, tenure, education, and job type for non-managerial employees to better understand their impact on audit fees, aiding investors in assessing financial reports and audit oversight functions.

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