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Market forces at play: The impact of audit market concentration and firm market power on audit fees

Natasha Aritha Saphirra*, Wiwi Idawati, Eddy Susanto

Indonesia Banking School, Jakarta, Indonesia

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ABSTRACT

The objective of this study is to examine the impact of Audit Market Concentration and Audit Firm Market Power on Audit Fees in non-financial firms listed on the Indonesia Stock Exchange between 2017 and 2020. The sample of 194 companies was chosen through purposive sampling. The independent variable, Audit Market Concentration, was measured using the Herfindahl Hirschman Index (HHI), and Audit Firm Market Power was measured using the absolute smallest difference in the market share value of an Audit Firm and its closest competitors. The market share was calculated using Audit Fee proxies that were summed based on the IDX Industrial Classification (IDX-IC). Our findings reveal that the market structure in Indonesia is a tight oligopoly, and the audit market conditions in the country are highly concentrated. Our results suggest that Audit Market Concentration has no effect on Audit Fees, while Audit Firm Market Power has a positive influence on Audit Fees.

1. Introduction

According to data released by the Ministry of Finance of the Republic of Indonesia (2021), there are currently 473 Public Accounting Firms operating throughout the country, accompanied by 1,416 active Public Accountants who have obtained permission from the Minister of Finance. However, this number is relatively low when compared to the total number of public and private companies in Indonesia, which amounts to 1.45 million or 43.7% of the 3.32 million Corporate Taxpayers obligated to submit Annual Income Tax Returns (KPAP, 2020). While companies issuing financial statements engage and compensate Public Accountants, the primary benefit of audits accrues to external stakeholders who use these statements to make informed decisions. In carrying out their responsibilities, Public Accountants must act with professional considerations, prioritize public interest, remain objective and free of conflicts of interest (independence), and continually enhance their competence and service quality (Alvin et al., 2014).

* Corresponding author. *E-mail address*: natasha.20181211079@ibs.ac.

Determining the Audit Fee is an integral part of an auditor's professionalism (Hasan, 2017). The Indonesian Institute of Certified Public Accountants (IAPI) defines an Audit Fee as a fee received by a Public Accountant from their client entity for the provision of audit services (Institut Akuntan Publik Indonesia, 2023). The Regulation *Peraturan Pengurus IAPI No. 2/2016* concerning Determination of Fees for Financial Report Audit Services (Institut Akuntan Publik Indonesia, 2016) stipulates the regulations regarding the basis for the imposition of Audit Fees. This regulation provides methods for public accountants to determine the amount of fair service fees based on professional considerations, such as the risk of the assignment, the complexity of the services provided, the level of expertise required, and other factors. (Agoes, 2017). However, the disclosure of the amount of audit fees paid by companies to public accountants for audit services in Indonesia is still voluntary, and not all companies disclose audit fees in their annual reports.

According to a recent study by the Financial Education & Research Foundation (FERF), the worldwide average audit fee for 2020 was US$ 2.52 million, indicating an increase of 3.7% from the previous year (Tyson, 2021). In Indonesia, the average audit fee for non-financial companies continues to increase and reached Rp. 2.02 billion in 2020, showing an increase of 9.29% from the previous year's Rp. 1.85 billion. This rise in the Audit Fee is due to the economic uncertainty brought about by the COVID-19 pandemic in 2020, leading to an increase in the scope and efforts of audits, including determining the valuation of the company's assets and going concern (Tyson, 2021). Changes in economic conditions pose a challenge to Audit Firms and their clients because such changes can affect the company's liquidity, risk, and performance, which, in turn, will affect the Audit Fee (Chen et al., 2019). Many companies have experienced deteriorating financial conditions, increasing the risk for clients, and forcing auditors to adopt a broader audit procedure, which requires more resources in audit work to evaluate the company's going concern assumptions, thereby increasing the Audit Fee (Chen et al., 2019; Huang et al., 2016). The demand for audit services by large Audit Firms is increasing because companies tend to select Audit Firms that have proven ability to audit large and complex companies, a good reputation, audit quality, industry specialization, international operations, and provide value-added services (Beattie et al., 2003).

The audit services market in Indonesia is currently dominated by global Big Four affiliated Audit Firms, namely Deloitte, PricewaterhouseCoopers, Ernst & Young, and KPMG, as well as second-tier global Audit Firms, namely BDO and RSM (Media Indonesia, 2019). A study of 194 Non-Financial companies listed on the Indonesia Stock Exchange (IDX) revealed that the top four Audit Firms have a market share of more than 45% annually, indicating that major Audit Firms mostly audit Non-Financial companies (Media Indonesia, 2019). In 2020, the top four Audit Firms that dominated the market were Audit Firm Purwantono Sungkoro & Surja (EY) with 39 clients, Tanudiredja, Wibisana, Rintis & Partners (PWC) with 23 clients, Amir Abadi Jusuf, Aryanto, Mawar & Partners (RSM) with 21 clients, and Tanubrata Sutanto Fahmi Bambang & Partners (BDO) with 12 clients. Smaller audit firms find it difficult to compete in the audit market for large and complex clients due to limited resources and networks to perform engagements (Gunn et al., 2019), resulting in a concentration of the market and increased market power for top Audit Firms. The ability to determine the price level above its marginal cost is higher for companies with greater market power (Situmorang et al., 2020).

Market concentration represents the degree of control that companies have in a market (Teguh, 2010). Empirical studies have shown that Audit Market Concentration has a positive effect on Audit Fees (Alfino & Siagian, 2020; Eshleman & Lawson, 2016; Gunn et al., 2019; Huang et al., 2016; Mardiana & Anggraita, 2016). Concentration can increase Market Power for Audit Firms that have a significant market share and thus increase Audit Fees. Conversely, concentration can also reduce Audit Fees due to economies of scale or tight competition between Audit Firms that dominate the market, as evidenced by the research of Situmorang et al. (2020) and Numan and Willekens (2012). A concentrated market reduces the fear of losing clients for the dominant Audit Firm and increases their bargaining power in determining the cost of audit services (Huang et al., 2016). Audit Firm Market Power has a significant positive effect on Audit

Fees, as observed in previous studies (Mardiana & Anggraita, 2016; Numan & Willekens, 2012; Situmorang et al., 2020; Zhang et al., 2019). Companies with market power compete with product differentiation, which can reduce competition and enable Audit Firms to increase audit fees above their marginal costs (Situmorang et al., 2020).

This study aims to re-examine whether Audit Market Concentration and Audit Firm Market Power affect the Audit Fee. The study will employ the measurements that were previously tested by Mardiana and Anggraita (2016) and Situmorang et al. (2020), using a population of companies listed by industry classification based on the IDX Industrial Classification (IDX-IC) of the Indonesia Stock Exchange. In contrast to previous research in Indonesia that relied on a proxy for measuring Market Share, such as total client assets and the number of clients being audited, this study will use the Audit Fee proxy. This approach follows the research of Eshleman (2013), Eshleman and Lawson (2016), Huang et al. (2016), and Kallapur et al. (2010). The study is structured as follows: Part 1 provides the background of the research; Part 2 presents the theoretical basis and hypothesis development; Part 3 describes the research methodology; Part 4 analyses and discusses the results; and Part 5 presents the conclusions drawn from this study.

2. Literature review and hypothesis development

2.1 Agency theory

To limit deviations from their interests, principals can set appropriate incentives for agents and monitor them to limit deviant activities (Jensen & Meckling, 1976). Agents are responsible for adopting good accounting policies, maintaining adequate internal control, and presenting fair financial reports (Alvin et al., 2014), which makes both agents and principals tend to choose Audit Firms with high credibility to increase user confidence in their financial statements. Large Audit Firms are considered better equipped to carry out tougher audit tasks and maintain their independence, because they aim to maintain a good reputation. When choosing an auditor or Audit Firm, both the principal and agent will look for those who have an international network and certain industry expertise. This preference can affect the Audit Market Concentration and the Audit Firm Market Power, indicating that only a few auditors are available to carry out engagements, leading to an industry or market controlled by a few Audit Firms.

2.2 Market structure

The relationship between market concentration and market competition is an important topic for regulators and researchers alike. Observing competition directly is a challenging task since it is a dynamic process. The Structure, Conduct, and Performance paradigm of industrial economic theory (Ferguson & Ferguson, 1994) is often employed to examine the nature of competition in the market. This paradigm suggests that market structure affects market behavior, and as a result, market structure is considered one of the most significant determinants of a country's economic performance (Dubaere, 2008). To classify market structures, modern industrial organizations have expanded the original four types into six. The first three types are associated with high market power and generally ineffective competition. These types are referred to as monopoly, dominant firm, and tight oligopoly, respectively. In contrast, the next three types are associated with effective competition, namely loose oligopoly, monopolistic competition, and pure competition (Beattie et al., 2003).

2.3 Audit fee

Audit fees refer to the monetary value of professional services rendered by public accountants to clients for audit services. According to the Indonesian Institute of Certified Public Accountants (IAPI), an audit fee is the fee received by a Public Accountant from their client entity.

The reward for these services must be commensurate with the work done, and public accountants are prohibited from offering fees that may damage the profession's image (Agoes, 2017). In Indonesia, the determination of audit fees has been regulated by Peraturan Pengurus IAPI No. 2/2016. This regulation is necessary because setting fees too low can lead to personal interests that have the potential to cause non-compliance with the code of ethics of the public accounting profession.

Since the mergers of major public accounting firms in 1989 and 1998, which left four major international accounting firms in 2002, research on audit fees has received considerable attention (Dunn et al., 2019; Gunn et al., 2019; Kallapur et al., 2010). Previous studies have found that mergers can affect market concentration, and an overly concentrated market structure can increase the market power of the top audit firms. Consequently, clients must pay attention to the effect of audit market concentration on the determination of audit fees (Eshleman, 2013).

2.4 Market concentration

Concentration refers to the degree of control exercised by companies in a market, which reflects the level of competition in that market (Teguh, 2010). In the audit services market, concentration is calculated to determine the extent to which a Public Accounting Firm controls a market and has market power. This market is characterized by a high level of concentration due to regulations for publicly traded companies to be audited, high barriers to entry for small Audit Firms, reputational effects, and the need for specialized knowledge (Numan & Willekens, 2012). Various proxies can be used to measure audit market concentration, including the number of clients, audit fees, and total client assets (Beattie et al., 2003).

One way to measure audit market concentration is through the Herfindahl-Hirschman Index (HHI), which measures the distribution of market concentration within an industry. The HHI value ranges from 0 to 1, where a value closer to 0 indicates a more even distribution of the observed output or variable, and the market is moving towards perfect competition, where no company dominates the market. Conversely, a value close to 1 represents a highly concentrated market, indicating a monopoly where one company has a 100% market share (Teguh, 2010). The HHI value can be interpreted as follows:

Table 1. The Value of the Herfindahl-Hirschman Index (HHI)

Value	Interpretation
< 0,15	Market is not concentrated
0,15 – 0,25	Fairly concentrated market
> 0,25	Highly concentrated market

Source: U.S. Department of Justice dan Federal Trade Commission, 2010

2.5 Market power

Market power is defined as a firm's ability to influence and control the price levels of goods or services in the market, which can result in an increase in prices above the competitive level (Landes & Posner, 1981). In the context of the auditing industry, auditors can possess market power if they differentiate their services or specialize in certain industries, allowing them to maintain high audit fees without losing market share (Numan & Willekens, 2012). However, this can have negative consequences on auditor choice and incentives to improve audit quality, leading to an increase in audit fees but a decrease in audit quality (Huang et al., 2016). Dominant companies with market power can also increase prices and generate high profits (Mardiana & Anggraita, 2016). Nevertheless, an auditor's reputation and market power can be short-lived without ensuring the quality of its audit, as any errors will be noticed by the market, and the auditor will face penalties (Situmorang et al., 2020).

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2.6 The size of audit firm

A Public Accounting Firm is a business entity that provides professional public accounting services and is established under the provisions of laws and regulations, having obtained a business license based on regulation Undang-Undang No. 5/2011 about Akuntan Publik. Alvin et al. (2014) categorize Public Accounting Firms into four sizes: Big Four international offices, national offices, regional offices and large local offices, and small local offices. An auditor with superior quality is expected to charge a high audit fee, and the most common measure of auditor quality is that they are part of one of the Big 8/6/5/4 International Public Accounting Firms (Hay, 2012). Public Accounting Firms may charge higher audit fees due to product differentiation through industry specialization and competition (Urhoghide & Izedonmi, 2015). It is challenging for smaller firms to compete in the audit market for large and complex clients because they lack the resources and network necessary to perform audit engagements (Gunn et al., 2019).

2.7 Company size

Company size refers to the magnitude of the Public Accounting Firm and can be measured based on various factors such as total assets, sales, stock market value, market capitalization, among others (Cristansy & Ardiati, 2016). The company's size is a reflection of the size and scope of the audit process that auditors will undertake. Typically, a larger company implies more substantial transactions that require greater effort and time to audit. Consequently, large companies are more likely to pay higher audit fees to compensate for the increased workload involved. The fees paid to auditors are usually proportional to the amount of time required to complete the assigned work (Urhoghide & Izedonmi, 2015).

2.8 Company financial condition

The financial condition of a company is a critical aspect that affects the risks an auditor will face. The level of audit risk is a crucial determinant of the Audit Fee, as auditors deal with inherent uncertainty concerning the accuracy of evidence, effectiveness of the client's internal control, and fairness of financial statement presentation upon audit completion (Alvin et al., 2014). Financial statements provide a measure of a company's performance and financial status, and clients experiencing financial difficulties often face higher audit fees (Huang et al., 2016).

2.9 Hypothesis development

2.9.1 Audit market concentration and audit fee

When auditing a large and complex public company, the auditor requires special accounting and auditing skills. Therefore, companies tend to select Audit Firms with a good reputation, special expertise in an industry, and many resources. This creates a higher barrier for smaller Audit Firms to enter the audit services market because they lack the resources and networks to carry out audit engagements (Gunn et al., 2019). The degree of control or audit market concentration is affected by this situation, making the level of competition in a market even lower. Fewer choices of auditors for companies create dominance in an audit market and increase audit fees.

Studies have found that the audit market is concentrated. Afriansyah and Siregar (2007) found that the concentration of the audit market in Indonesia in 2005 was at the CR4 level of 88% and at the CR6 level of 96%, based on a proxy for total client assets. Situmorang et al. (2020) found that in Indonesia, the average audit market concentration in 2012-2015 was 22.4%, smaller than the market in Singapore, which was 32.9%. Huang et al. (2016), who examined the audit market in China, found that the top 4 Audit Firms had an average market share of 90.8% in 2011. High concentration may reduce choices for service users (Beattie et al., 2003), creating dominance by certain Audit Firms in the audit market and increasing Audit Fees.

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Several studies have explored the relationship between audit market concentration and audit fees. Kallapur et al. (2010) found a significant positive correlation between the concentration of the Big 5 audit market and total clients for all Audit Firms, and audit fees. Mardiana and Anggraita (2015) also found a significant positive effect of concentration, proxied by the total number of Audit Firm clients, on audit fees using non-financial companies in Indonesia. Similarly, Eshleman (2013), Gunn et al. (2019), and Huang et al. (2016) found that audit fees tend to be higher in more concentrated markets, particularly for complex clients. In contrast, Situmorang et al. (2020) found a negative and significant relationship between audit market concentration and audit fees for non-financial companies listed on IDX, but no relationship for those listed on SGX.

The effectiveness of regulation on auditor rotation in decreasing audit market concentration remains disputed. While Mardiana and Anggraita (2016) suggest that it could increase competition and favor local Audit Firms, Afriansyah and Siregar's (2007) research indicates that auditor rotation only affects companies with small total assets, while large companies still prefer the Big 4. Ultimately, high concentration levels may lead to a lack of choice for service users, dominant Audit Firms, and increased audit fees (Beattie et al., 2003). However, Huang et al. (2016) found that increased audit market concentration can indirectly lead to higher audit quality, as measured by an increase in audit fees.

The previous research results have shown that the relationship between audit market concentration and audit fees can be positive or negative (Huang et al., 2016). According to economic theory, the Structure, Behavior, and Performance paradigm indicates that market concentration can increase audit firm market power and audit fees (Zhang et al., 2019). Dominant audit firms, with reduced competitors, possess bargaining power, and can charge higher prices for their services. However, increased concentration can also lead to decreased audit fees due to economies of scale and high competition among existing audit firms (Huang et al., 2016). The reduction in market competitors can provide an opportunity for dominant audit firms to develop industry expertise, resulting in lower audit fees, which enables audit firms to request lower audit fees due to economies of scale, thereby attracting more clients (Dubaere, 2008). Based on the above explanation, this study proposes the following first hypothesis:

H1: The audit market concentration has a significant positive effect on audit fee

2.9.2 Audit firm market power and audit fee

Market concentration can result in a situation where dominant players can easily collude and lead prices, giving them significant market power (Willekens & Achmadi, 2003). An Audit Firm has market power if it competes in the market with product differentiation or specializes in a particular industry, reducing competition and allowing them to charge an audit fee above marginal cost (Numan & Willekens, 2012). This leads to price leadership, bargaining power, and the ability to determine audit fees for their clients (Situmorang et al., 2020). Research by Zhang et al. (2019) suggests that market concentration can increase the market power of Audit Firms and allow them to charge higher fees.

Concerns have been raised by regulators worldwide about the potential adverse consequences of Audit Firm market power. Willekens et al. (2023) reviewed the problem of imperfect competition in the audit market and its effect on audit quality. They found that audit quality increases as market power, proxied by the market share gap, increases. The authors also warned that audit regulations aimed at reducing the market power of Audit Firms, such as mandatory rotation, should be evaluated carefully, as they can have negative effects on audit quality.

Research by Mardiana and Anggraita (2015) evaluated Market Power through the smallest difference in Audit Firm's market share with its closest competitors using non-financial companies in Indonesia. Their

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results show that Market Power has a significant positive relationship with Audit Fees when measured by the number of clients, while the total assets proxy did not show significant results due to cherry-picking activities. Situmorang et al. (2020) found that companies with higher market power can determine price levels above their marginal costs, and their research conducted observations on companies listed on the Indonesia and Singapore Stock Exchanges. Their findings suggest that in Indonesia, Audit Firm Market Power has a positive relationship with audit fees, whereas in Singapore, there is no relationship between Audit Firm Market Power and audit fees.

Most studies suggest that larger Audit Firms can earn higher fees. Therefore, the following hypothesis is formulated based on this research:

H2: Audit firm market power has a significant positive effect on audit fee

3. Research methodology

3.1 Population and sample

The population for this study comprises all non-financial companies listed on the Indonesia Stock Exchange (IDX). The latest industrial classification issued by the IDX in January 2021, namely the IDX Industrial Classification (IDX-IC), will be used to divide the sectors and calculate market concentration and market power. This replaces the Jakarta Stock Industrial Classification (JASICA) that had been in use since 1996. The research data used in this study were obtained from the audited annual reports of non-financial companies listed on the IDX, which were sourced from the official website of the companies and the official website of the IDX. The research period covers the financial years from 2017 to 2020.

3.2 Research variables

Table 2. Variable Operation

Variables	Variable Measurement	Scale
Audit Fee	***FEE* = LN (*Audit Fee*)** Explanation: LN = Natural logarithm	Ratio
Audit Market Concentration	***Herfindahl-Hirschman Index*** $$HHI = \sum_{i=1}^{N} S_x{}^2$$ Explanation: N = sum of Audit Firm S_x = Market Share Audit Firm *x* in industry	Ratio
Audit Firm Market Power	$$MPOWER = S_x - S_y$$ Explanation: The absolute smallest difference between Audit Firm x's market share value and Audit Firm y's (closest competitor) (Willekens dkk., 2020) $$Market\ Share\ (S) = \frac{Audit\ Fee\ received\ by\ Audit\ Firm\ x}{\sum Audit\ Fee\ for\ all\ Audit\ Firms\ in\ an\ industry}$$ (Eshleman, 2013; Eshleman & Lawson, 2016; Huang dkk., 2016; Kallapur dkk., 2010)	Ratio
Audit Firm Size	***AUDFIRM* = *dummy variable*** **1 = *Big Four client*** **0 = non-*Big Four client***	Ratio

Company Size	***SIZE = LN (Total Assets)*** Explanation: LN = Natural logarithm	Ratio
Company Financial Condition	$\boldsymbol{CR = \frac{Current\ Asset}{Current\ Liability}}$ (Subramanyam, 2014)	Ratio

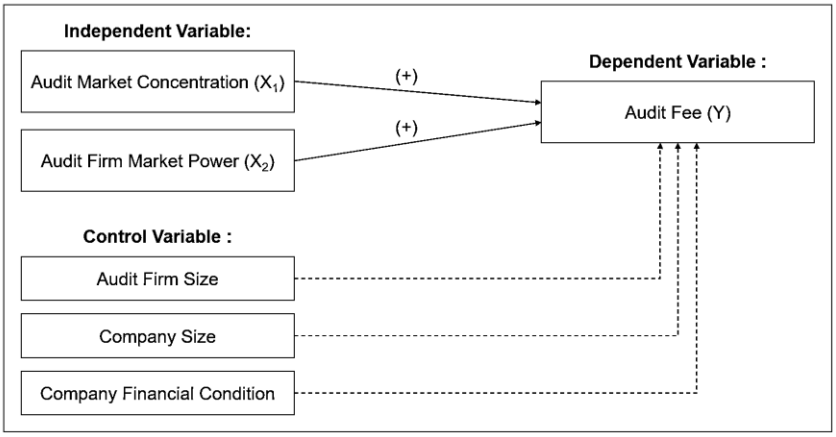

Figure 1. Research Framework

3.3 Research mode

The regression model used to answer all the hypotheses proposed in this study:

$$FEE = \alpha 0 + \beta 1HHIit + \beta 2MPOWERit + \beta 3AUDFIRMit + \beta 4SIZEit + \beta 5CRit + e \qquad (1)$$

Explanation:

FEE	:	Natural logarithm Audit Fee or audit fees paid by the client to the auditor.
HHI	:	Audit Market Concentration by measuring the Herfindahl-Hirschman Index.
MPOWER	:	Audit Firm Market Power with absolute distance measurement of Audit Firm's market share with other Audit Firms in a certain industry.
AUDFIRM	:	Dummy variable of Audit Firm size, 1 if the company is a Big 4 client, and 0 otherwise.
SIZE	:	Company size with the natural logarithm of the company's total assets.
CR	:	Current Ratio calculates current assets per current liability.
α	:	Constanta.
$\beta 1, \beta 2, \ldots, \beta 5$	:	Regression Coefficient.
e	:	Residual Error.

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4. Results

4.1 Research sample

The sample for this research consists of 194 non-financial companies listed on the Indonesia Stock Exchange, obtained through purposive sampling. The research covers a period of four years, resulting in 776 research observations.

4.2 Demographics

According to the findings of this research, the average audit fees of 194 non-financial companies listed on the IDX for the 2017-2020 period increased annually. In 2020, the average audit fee reached Rp. 2.02 billion, which is a 9.29% increase from the previous year's figure of Rp. 1.85 billion. The study attributes this rise to changes in economic conditions caused by the COVID-19 pandemic, which impacted companies' performance and increased audit scope and effort. Upon closer examination, the average audit fee per sector decreased in the Energy and Technology sector in 2018, the Industrial sector in 2019, the Consumer Non-Cyclical and Consumer Cyclical sectors in 2019 and 2020, as well as the Property & Real Estate and Transportation & Logistics sectors in 2020. The observed decrease in average audit fees indicates a competitive market where Audit Firms compete to retain clients, increase their market share, and offer economies of scale. Furthermore, the variation in average audit fees between sectors indicates that the audit fees are determined based on negotiations between the Audit Firms and their clients (Situmorang et al., 2020; Mardiana & Anggraita, 2015).

Table 3. Herfindahl Hirschman research sample index by sector

Sector	2017	2018	2019	2020	Avg.	Interpretation
Energy	0,314	0,276	0,321	0,282	0,298	Highly Concentrated
Basic Material	0,190	0,178	0,281	0,357	0,252	Highly Concentrated
Industrial	0,186	0,181	0,234	0,211	0,203	Fairly concentrated market
Consumer Non-Cyclical	0,221	0,205	0,228	0,236	0,222	Fairly concentrated market
Consumer Cyclical	0,160	0,143	0,135	0,141	0,145	Market is not concentrated
Healthcare	0,258	0,291	0,287	0,314	0,288	Highly Concentrated
Property & Real Estate	0,166	0,189	0,144	0,138	0,159	Fairly concentrated market
Technology	0,351	0,376	0,637	0,674	0,509	Highly Concentrated
Infrastructure	0,391	0,451	0,439	0,439	0,430	Highly Concentrated
Transportation & Logistic	0,395	0,346	0,359	0,331	0,358	Highly Concentrated

Source: Data processed by the author, 2022

This research sample calculates the Audit Market Concentration to determine the level of competition in the market. The Herfindahl Hirschman Index was calculated per industrial sector from 2017 to 2020, and the results indicate that the Consumer Cyclical sector had market conditions that were not concentrated, while the Industrial, Non-Consumer Cyclical, Property & Real Estate sectors had fairly concentrated market conditions. Furthermore, the Energy, Basic Materials, Healthcare, Technology, Infrastructure, and Transportation & Logistics sectors had highly concentrated market conditions. Most of the sectors in the research sample had highly concentrated market conditions, indicating low competition among Audit Firms in the market.

This low competition can be attributed to the domination of large Audit Firms in the market. However, analyzing competition only among large Audit Firms reveals that competition is still high. The market share of the top four Audit Firms that dominate the industry has a gap that is not too far when compared to the market share of other small Audit Firms, as adjusted to the Market Share proxy using Audit Fee. Therefore, the decline in the average audit fee in some sectors is due to competition among large Audit Firms.

This study analyzes the market structure of audit services in Indonesia using a research sample of non-financial companies listed on the IDX. The results indicate that the top four Audit Firms (EY, PWC, Deloitte, KPMG, and RSM) control more than 60% annually, indicating a tight oligopoly market structure for audit services in the research sample of Non-Financial Companies in Indonesia.

4.3 Statistic descriptive

Table 4. Statistic descriptive result

C	Mean	Median	Max.	Min.	Std. Dev.	Obs.
FEE	20.54689	20.46773	24.87251	17.66032	1.151571	774
HHI	0.255629	0.227542	0.673729	0.134924	0.102034	774
MPOWER	0.073706	0.022809	0.688233	0.000000	0.124143	774
AUDFIRM	0.417313	0.000000	1.000000	0.000000	0.493434	774
SIZE	29.17164	29.22574	35.00192	21.90683	1.736969	774
CR	2.047799	1.411993	11.39856	0.000160	1.844846	774

Source: Output Eviews 9 Author Processed Data, 2022

4.4 Research results analysis

Table 5. Data panel estimation – fixed effect model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.295765	0.557285	14.88604	0.0000
HHI	-0.308475	0.509425	-0.605536	0.5451
MPOWER	1.596585	0.260855	6.120584	0.0000
AUDFEE	0.560983	0.066333	8.457139	0.0000
SIZE	0.413360	0.018546	22.28890	0.0000
CR	-0.039168	0.015472	-2.531583	0.0116
R-squared			0.828537	
Adjusted R-squared			0.769494	
F-statistic			14.03278	
Prob(F-statistic)			0.000000	
Durbin-Watson stat			1.672084	

Source: Output Eviews 9 Author Processed Data, 2022

From the table above, the following multiple linear regression equation is obtained:

$$FEE = 8.295765 - 0.308475\ HHIit + 1.596585\ MPOWERit + 0.560983\ AUDFEEit + 0.413360\ SIZEit - 0.039168\ CR\ it$$

Table 5 above displays the test value of the coefficient of determination (Adjusted R-squared) which is 0.7695. This indicates that 76.95% of the dependent variable, Audit Fee (FEE), can be explained by the independent variables in this study, namely Audit Market Concentration (HHI), Audit Firm Market Power (MPOWER), Audit Firm Size (AUDFIRM), Company Size (SIZE), and Company Financial Condition

(CR). The remaining 23.05% of the dependent variable is explained by other factors that were not examined in this study. Additionally, the probability value (F-Statistic) is 0.00 which is below 0.05. Therefore, the regression model is capable of predicting audit fees and the independent variables simultaneously affect the dependent variable in this study.

4.5 Discussion of research result

4.5.1 The influence of audit market concentration on audit fee

The regression results in table 5 reveal that the relationship between the Audit Market Concentration in Non-Financial Companies in Indonesia, analyzed through the Herfindahl Hirschman Index (HHI), and Audit Fee, measured by the Market Share proxy, is insignificant with a negative coefficient and probability of over 0.05. This outcome is consistent with the studies of Kallapur et al. (2010) that utilized the Audit Fee proxy, Mardiana and Anggraita (2016) with the Total Assets proxy, and Situmorang et al. (2020) with the Total Assets proxy in the Singaporean market, which also showed insignificant results.

The insignificance of the relationship between Audit Firm Market Concentration and Audit Fees may be attributed to differences in the level of competition in each sector. Although the overall average Audit Fee increased and the overall average Audit Market Concentration was highly concentrated, certain sectors experienced fluctuations in the average Audit Fee, with some experiencing a decline, and others an increase in certain years. Moreover, not all sectors exhibited highly concentrated market conditions, as some were moderately concentrated and others were not.

The negative direction of the results of this study implies that there is intense competition among dominant Audit Firms in the market. As a result, firms engage in economies of scale to retain clients by reducing costs. The existence of regulations in determining the audit service fee can also influence the level of competition. Regulation Peraturan Pengurus IAPI No. 2/2016 contains a method for determining the overall service fee aimed at preventing Audit Fees charged to clients from being too low, which could negatively impact independence and professionalism and potentially lead to non-compliance with the professional code of ethics. Consequently, the audit market concentration has no effect on the audit fee.

4.5.2 The influence of audit firm market power on audit fee

The regression results presented in Table 5 above indicate that Audit Firm Market Power has a significant positive impact on Audit Fees. These findings are consistent with prior research conducted by Mardiana and Anggraita (2016), Numan and Willekens (2012), Situmorang et al. (2020), and Zhang et al. (2019). The reason for this positive relationship is that Audit Firms with the largest market share have developed industry-specific expertise, which acts as a differentiation strategy to maintain their competitive edge. An Audit Firm is considered to have industry specialization if its market share exceeds 30%. Thus, Audit Firms with market power have the ability to influence audit fees.

The research sample analyzed in this study consists of non-financial companies listed on the Indonesia Stock Exchange between 2017 and 2020. The results indicate that the audit market conditions in these companies were highly concentrated, indicating a low level of competition in the industry. This is because the dominant Audit Firms have a competitive advantage, which creates a significant barrier to entry for smaller firms seeking to enter the market. Consequently, these dominant Audit Firms are able to charge higher fees.

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4.5.3 The influence of audit firm size on audit fee

According to the results presented in table 5, the size of the Audit Firm, measured by a dummy variable that assigns a value of 1 if the company uses audit services from the Big Four and 0 if it uses services from the Non-Big Four, has a significant positive effect on the Audit Fee. This finding is consistent with the research conducted by Cristansy and Ardiati (2016) and Hasan (2017), which demonstrate that companies that use audit services from the Big Four pay higher fees for these services compared to those using Non-Big Four services. The Big Four Audit Firms are known for their high reputation, vast resources, international network, and industry specialization, which allow them to charge higher fees than their Non-Big Four counterparts.

4.5.4 The influence of company size on audit fee

Table 5 above demonstrates that the size of a company, measured by the natural logarithm of its total assets, has a significant positive correlation with audit fees. This is due to the fact that large companies usually have a high volume of transactions, which require more time and effort from auditors, resulting in higher fees. These findings are consistent with previous research conducted by Cristansy and Ardiati (2016) and Hasan (2017), which also observed a positive relationship between company size and audit fees.

4.5.5 The influence of company financial condition on audit fee

The study reveals that the Current Ratio is negatively related to the Audit Fee, with a coefficient of -0.039 and a probability of less than 0.05, indicating a significant inverse effect. These results align with those of Huang et al. (2016). The Current Ratio is a crucial factor in determining audit risk, as it reflects a company's liquidity position, indicating favorable financial conditions. Therefore, auditors are better able to fulfill their responsibilities, resulting in lower Audit Fees. Conversely, companies experiencing financial difficulties typically pay higher audit fees, as a smaller Current Ratio indicates a higher level of audit risk.

5. Conclusion

The findings of this study indicate that, for the 2017-2020 period in Non-Financial Companies Listed on the Indonesia Stock Exchange, the Audit Market Concentration did not have a significant effect on audit fees. However, Audit Firm Market Power had a significant positive influence on Audit Fees, while Public Accounting Firm Size and Company Size had a positive influence. On the other hand, the Company's Financial Condition had a negative influence on Audit Fees.

5.1 Implications

The findings of this study demonstrate that Audit Firm Market Power has a significant positive impact on Audit Fees, indicating that Audit Firms with market power can charge higher fees above their marginal costs. This market power can be achieved through improved competence, product differentiation, and specialization in auditing for particular industries. Consequently, larger and more complex companies that require specialized expertise in auditing are charged higher fees. Companies can receive good audit quality if they choose an Audit Firm with expertise in their industry.

The positive relationship between the Audit Firm Size variable and Audit Fees suggests that larger firms have the ability to charge higher fees due to their greater resources, industry specialization, and international networks. Local firms affiliated with foreign Audit Firms, especially the Big Four, have an advantage in charging higher audit fees. Similarly, the Company Size variable has a positive effect on Audit Fees, indicating that larger companies require a more extensive audit process, resulting in higher fees. The negative relationship between the Company's Financial Condition and Audit Fees implies that companies with better financial conditions are charged lower fees. Companies should maintain their financial condition to reduce audit risk, which can affect the amount of the Audit Fee.

These results underscore the need for balanced regulation to control the determination of Audit Fees, ensuring profitability for both auditors and clients. Regulations should limit the setting and disclosure of information regarding the Audit Fee to avoid excessive fees while still reflecting the risks and efforts of the auditor. Stricter regulations and laws can prevent changes in concentration or market power from affecting the Audit Fee.

5.2 Limitations

This study has several limitations that must be acknowledged. Firstly, the research sample is relatively small, consisting of only 194 out of 767 listed companies, due to the non-mandatory disclosure of Audit Fees in the Annual Report. Secondly, the study only focuses on two independent variables, namely Audit Market Concentration and Audit Firm Market Power, with a proxy for measuring market share with Audit Fee, as well as three control variables, namely Audit Firm Size, Company Size, and Company's Financial Condition. Therefore, other variables that can affect the high and low Audit Fee have not been considered.

5.3 Recommendations

In light of these limitations, several recommendations can be made for future research to enhance the quality of research on this topic. Firstly, strict regulations need to be in place to ensure the determination and disclosure of audit fees are transparent and objective. This will help to reduce the potential for fraud or unfairness in setting fees that are too high or too low, which can affect the quality of the audit. Secondly, proxies for market share, such as Total Clients, Total Client Assets, and/or Total Client Sales can be used in future research to measure the market share of Audit Firms. Additionally, further research can analyze the effect of each level of concentration on the Audit Fee, and other variables, such as ROA, ROE, Debt Ratio, and Quick Ratio can be included to describe the company's financial condition.

In conclusion, each level of competition in a market that is not concentrated, moderately concentrated, and highly concentrated needs to be further analyzed to determine whether it affects audit fees. Through these suggestions, future research can be more comprehensive and robust in examining the relationship between market concentration, market power, and audit fees in Non-Financial Companies Listed on the Indonesia Stock Exchange.

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Conflict of interest statement

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts and declare the absence of conflicting interests with the funders.

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About the Authors

Natasha Aritha *Saphirra, Bachelor of Accounting* is a student under supervision of Dr. Wiwi Idawati and Eddy Susanto, S.E., M.M. from Indonesia Banking School, and she is the main author for this research. Her research interest covers economics, accounting, and auditing. She can be contacted via email on natasha.20181211079@ibs.ac.id.

Dr. Wiwi Idawati, is Associate Professor in the Department of Accounting at the Indonesia Banking School (ORCID: https://orcid.org/0000-0002-0242-8268). Her main research activity is in the area Accounting and Auditing. She has published widely on these subjects in publications such as International Journal of Economic Research and International Journal of Applied Business and Economic Research. She can be reached through her email at wiwi.idawati@ibs.ac.id.

Eddy Susanto, Magister Management is a Senior Lecturer at Indonesia Banking School. His main research interest is economic, management and banking. He can be reached through his email at eddys110958@gmail.com.

Authors' contributions

Natasha Aritha Saphirra carried out the research, wrote and revised the article. Both Wiwi Idawati and Eddy Susanto review, supervised and approved the article submission.