International Research Journal of Management, IT & Social Sciences
Available online at https://sloap.org/journals/index.php/irjmis/
Vol. 10 No. 3, May 2023, pages: 198-207
ISSN: 2395-7492
https://doi.org/10.21744/irjmis.v10n3.2318

Firm Size Moderate the Effect of Audit Quality and Managerial Ownership on Investment Efficiency

Pande Putu Biantari Darmayanti [a]
Dewa Gede Wirama [b]
I Putu Sudana [c]
Maria Mediatrix Ratna Sari [d]

Article history:

Submitted: 27 March 2023
Revised: 09 April 2023
Accepted: 18 May 2023

Keywords:

audit quality;
effects audit quality;
firm size;
investment efficiency;
managerial ownership;

Abstract

This study aims to examine the effect of audit quality and managerial ownership on firms' investment efficiency. In addition, this study also aims to investigate the effect of firm size in moderating the effects of audit quality and managerial ownership on investment efficiency. The population of this study is manufacturing sector companies listed on the Indonesia Stock Exchange (IDX). Using a sample of 162 companies in 2019-2021, 486 observations were obtained. This study used logistic and moderated regression analyses (MRA) with Eviews 12 software for data analysis. The results show that audit quality does not affect investment efficiency. Managerial ownership affects investment efficiency. Firm size does not moderate the effect of audit quality on investment efficiency. Firm size can strengthen the effect of managerial ownership on investment efficiency.

International research journal of management, IT and social sciences © 2023. This is an open access article under the CC BY-NC-ND license (https://creativecommons.org/licenses/by-nc-nd/4.0/).

Corresponding author:
Pande Putu Biantari Darmayanti,
Faculty of Economics and Business
Udayana University, Bali, Indonesia.
Email address: *biantaripande@gmail.com*

[a] Faculty of Economics and Business Udayana University, Bali, Indonesia
[b] Faculty of Economics and Business Udayana University, Bali, Indonesia
[c] Faculty of Economics and Business Udayana University, Bali, Indonesia
[d] Faculty of Economics and Business Udayana University, Bali, Indonesia

1 Introduction

Efficient investment is an investment activity carried out by the company optimally, namely by using resources appropriately so that there is no waste of existing resources (Sari & Suaryana, 2014). The company performs efficiencies to reduce costs and facilitate the process of properly managing the company to achieve company goals. According to Biddle et al. (2009), companies that invest efficiently carry out projects with a positive net present value (NPV) without market friction. Companies that do not invest efficiently are categorized into two, namely underinvestment and overinvestment. Underinvestment is a condition where the company misses an investment opportunity that will have a positive NPV. Meanwhile, overinvestment is defined as an investment in a project with a negative NPV (Cao et al., 2020; Chen et al., 2012; Chen et al., 2017; Chen et al., 2019; Chen et al., 2021; Chen et al., 2017).

Management may inadvertently make decisions that are not the best for the company (Wardhani, 2017). One of them is an inefficient investment decision for the company. Inadequate investment conditions are related to information asymmetry and interest differences between managers and shareholders. Therefore, this research is crucial because it will have macro-economic implications considering the importance of investment as a determinant of a country's economic growth and micro-economic implications, especially at the company level, bearing in mind that investment is the primary determinant of the return on capital earned by investors. Investment decisions are vital to shaping the future success of companies and their managers (Bae et al., 2017). Investment is related to increased capital and company sales (Nathaniel & Butar, 2019). If the company's sales increase, then the company's production capacity must also be increased so that the company must raise the invested capital to support the company's operational activities. According to Bae et al. (2017), the company's investment level can be seen from the company's total capital expenditure (Watts & Zimmerman, 1983; Watts & Zimmerman, 1978; Soliman, 2020; Sun, 2014).

The theory that is widely used to explain management behavior is agency theory. Agency theory explains the relationship between agents and principals (company owners). Ideally, the agent appointed as the party to run the company by the owners will act to improve the welfare of the owners. However, as long as the company operates, there are differences in interests and goals between the agent and the principal, resulting in agency problems. In addition, managers as agents appointed by shareholders (principals) have more information about the internal company than shareholders. This is called information asymmetry, namely information that is not balanced due to the unequal communication distribution between principals and agents. The emergence of conflicts of interest and information asymmetry will affect efficient decision-making (Harjito & Nurfauziah, 2006).

Jensen & Meckling (1976) explained that this agency problem could overcome agency costs, namely monitoring costs, bonding costs, and residual losses. Monitoring costs are incurred because shareholders as principals must supervise and control the behavior of managers as agents. Bonding costs are costs incurred by managers as agents that are binding as a guarantee that managers carry out activities that will not harm shareholders, so there is no need to supervise. Residual loss is the difference in returns (return) obtained due to differences in investment decisions between the principal and the agent. Monitoring costs are related to the accounting function of a supervisor (Islami, 2019; Hanazaki & Liu, 2007; Sinaga & Ghozali, 2012; de Guevara et al., 2022). The presentation of financial reports by management to shareholders needs to be supervised by the auditor as an independent party. The auditor must ensure that the financial reports presented by management are by applicable regulations so that the information in the financial statements can be appropriately used for decision-making. Therefore, a quality audit is needed to ensure that the financial statements presented are high quality. This will impact decisions to be taken, including investment decisions (Park et al., 2017).

Bonding costs refer to trying to convince managers to work for owners' interests without the need to exercise supervision. An example of this bonding cost is executive compensation, such as giving managers shares. This will have an impact on company value because managers are motivated to improve their welfare as well as company owners. Ownership of shares by managers in large companies can significantly reduce conflicts between principals and agents (Singh & Davidson III, 2003). This can encourage managers to make decisions that align with the principal's objectives, including investment decisions. Audit quality is suspected to be one factor that influences a company's investment efficiency. A competent and independent auditor carries out a quality audit. High audit quality will produce high-quality financial reports and reduce earnings management practices. In addition, the auditor also plays a role in monitoring client activities by evaluating operational, investment, and financing risks and then using these risks to plan and implement the necessary audit procedures. In other words, the act of auditing itself leads to the production of information that will provide more details for making investment decisions (Boubaker et al., 2018).

Managerial ownership is the percentage of share ownership owned by management, namely the CEO or Directors of the company where he serves. Managerial share ownership means that the company's CEO also owns shares. Managerial share ownership can be a control tool to avoid tunneling activities, so if a company has managerial share ownership, the company's investment efficiency can be better (Anela & Prasetyo, 2020). Like managerial share ownership, compensation in the form of management stock options is also considered to help increase investment efficiency in the company. Several companies in Indonesia have launched compensation programs in the form of management stock options so that management also has room to participate in company ownership (Shahzad et al., 2019; Simanungkalit, 2017; Santoso & Susilowati, 2020; Raguseo et al., 2020).

A research gap from previous studies raises suspicions of other factors influencing the relationship between audit quality and managerial ownership on investment efficiency. This study adds a moderating variable that is thought to strengthen the relationship between audit quality and managerial ownership on investment efficiency, namely firm size. Firm size is classified into large and small, measured by total assets owned. According to Jensen & Meckling (1976), companies with large sizes will tend to have more significant agency problems because it is more difficult for owners to exercise control over the company. Conversely, a company with a small size and a few types of business will tend to have more minor agency problems. This means that a company, to a large extent, will require higher audit quality to reduce agency problems, namely information asymmetry, including information related to the company's investment decisions. In addition, companies with large sizes and high information asymmetry can be controlled by management's share ownership. Management who owns company shares will align their interests with those of shareholders (Rashed et al., 2018; Park et al., 2016; Maryanti et al., 2022; Meitari & Astika, 2021).

Literature review and hypothesis development

Investment decisions are vital decisions that shape a company's and its managers' future success. Given these decisions' importance, managers are incentivized to make informed investment decisions by seeking credible and incremental information. Likewise, with investors, management investment decisions are made in an information environment, and information is expensive to obtain (Bae et al., 2017).

Audit quality can determine the level of trust that users of financial statements have in obtaining financial information. High-quality auditors are motivated and able to increase pressure on management, not only to comply with GAAP but also to exercise caution and avoid risks of material misstatement. Previous literature suggests that high-quality audits are associated with more transparent and reliable financial reports, fewer earnings management and lower discretionary accruals, higher analyst ratings of financial disclosure quality, lower restatement risk, and board reputation capital. higher (Hammami & Hendijani Zadeh, 2020). Biddle et al. (2009) investigated the effect of financial reporting quality on each investment by dividing it into underinvestment and overinvestment. The results show that high quality accounting information reduces both underinvestment and overinvestment. Independent external audits can reduce stakeholder information asymmetry problems by ensuring that the accounting information presented is of high quality (Mudjijah et al., 2019; Kadapakkam et al., 1998; Lai, 2009; Hou et al., 2023).

H1: Audit quality has a positive effect on investment efficiency

Managerial ownership is a condition where the manager takes part in the company's capital structure or in other words, the manager has a dual role as a manager and shareholder in the company. Ownership of company shares by managers can align the interests of management and shareholders. Managers will be more careful in making decisions because they also bear the risk of these decisions (Pandansari & Yuyetta, 2016). Jensen & Meckling (1976) suggest that granting equity ownership to managers can reduce the conflict of interest between agents and principals over investment decisions by aligning management incentives with those of shareholders. Jensen shows that the manager's preference for empire building will lead the manager to spend essentially all available funds on investment projects. Hence, granting equity ownership to managers reduces their propensity to invest free cash flows in unprofitable investment projects that are detrimental to shareholder interests (Vijayakumaran, 2021). Increased managerial ownership can limit managerial manipulation, improve the quality of financial reporting and lead to better financial performance through superior investment positions. According to agency theory, there is a positive relationship between managers who have an interest in and a stake in organizational equity and optimal investment decisions (Nor et al., 2017).

H2: Managerial ownership has a positive effect on investment efficiency

According to Jensen & Meckling (1976), companies with large sizes have high business complexity so that they tend to cause greater agency problems because it is more difficult for owners to exercise control over the company. Conversely, a company with a small size and a few types of business will tend to have smaller agency problems. Large companies face higher requirements and challenges in information processing, which hinder organizational performance including investment decisions (Li, 2018). This means that a company with a large size will require a higher audit quality to ensure that the information presented in the financial statements is sufficient so that it can reduce information asymmetry related to the company's investment decisions. Based on this, the hypothesis proposed is as follows (DeAngelo, 1981; Elaoud & Jarboui, 2017; Erawati et al., 2021; Firawan & Dewayanto, 2021).

H3: Firm size strengthens the effect of audit quality on investment efficiency.

Large companies will provide opportunities for share ownership by management. Apart from increasing capital requirements, large companies need to optimize the use of resources (Dang et al., 2018). Supervision of this matter can be done one of them with the existence of share ownership by management. Granting share ownership to management is one of the solutions to reduce agency problems within the company. Management who owns company shares will align their interests with those of shareholders, especially in maximizing the profits to be obtained as shareholders. Companies with large size and high information asymmetry can be controlled by having managers as company shareholders. Companies with smaller sizes have less information asymmetry than large companies so that owners or shareholders tend to control the company themselves. Based on this, the hypothesis proposed is as follows (Firmansyah & Triastie, 2020; Francis & Yu, 2009; Guthrie & Hobbs, 2021; Adityasih, 2010).

H4: Firm size strengthens the effect of managerial ownership on investment efficiency.

2 Methods

This research was conducted at the Indonesia Stock Exchange which was accessed through the website www.idx.co.id and the official websites of each company. The researcher chose this research location because companies that have gone public have published financial reports and annual reports so that they can be accessed by the public. The population used in this study are all manufacturing sector companies listed on the Indonesia Stock Exchange (IDX). The research sample in this study is a manufacturing company listed on the IDX in the 2019-2021 period. Manufacturing companies were chosen because manufacturing companies have a level of operational activity on complex investments so that manufacturing companies are considered according to the sample in this study.

Determination of the sample carried out in this study using the purposive sampling method, namely the method of taking samples by determining their own criteria to suit the research objectives. The criteria used are:

1. Manufacturing sector companies listed on the Indonesia Stock Exchange consecutively in 2019-2021
2. The company published audited financial statements for the 2019-2021.

Data analysis techniques are methods used in processing research data and analyzing data so that the data can be understood. This study used logistic regression analysis and moderated regression analysis (MRA) as data analysis techniques. Logistic regression is a cumulative distribution function (CDF) model that is able to guarantee the value of the dependent variable (Y) lies between 0 and 1 according to probability theory. While MRA is a test conducted to determine the interaction between variables. Data analysis in the study was carried out using Eviews 12 software (Apriliani & Dewayanto 2018; Bedard et al., 2010; Butar-Butar, 2022; Bzeouich et al., 2019).

3 Results and Discussions

Model Fit Test

The results of this model fit test can be seen from the Chi Square probability value of the Andrews and Hosmer-Lemeshow test. If the value of the test results is the same or less than 0.05, it can be concluded that there are differences between the empirical data and the research model so that they do not fit. However, if the Chi Square probability value of the Andrews and Hosmer-Lemeshow test is greater than 0.05, it can be concluded that there is no difference between

the empirical data and the research model so that it fits the model. The results of the Andrews and Hosmer-Lemeshow test are presented in Table 1 below.

Table 1
Model Fit Test

H-L Statistic	16,2647	Prob. Chi Sq (8)	0,0874
Andrews Statistic	17,1588	Prob. Chi Sq (10)	0,0709

Secondary Data, 2023

Table 1 shows that the Chi Square probability value of the H-L Statistical Test is 0.0874 which is greater than 0.05. This means that there is no difference between the empirical data and the estimated research model data so that it fits the model and there is no need for model modification (Stoel et al., 2012; DeAngelo, 1981).

R-Square

In this analysis, the coefficient of determination is obtained from the McFadden R square value. If the R square value is close to 1, it means that the independent variable has provided almost all the information needed to predict the dependent variable. The results of the Andrews and Hosmer-Lemeshow test are presented in Table 2 below.

Table 2
Determination Coefficient (R^2)

McFadden R-Squared	0,048905	Mean dependent var	0,557613
S.D. dependent var	0,497181	S.E. of regression	0,485583
Akaike info criterion	1,330534	Sum squared resid	113,1798
Schwarz criterion	1,382215	Log likelihood	-317,3197
Hannan-Quinn criter	1,350838	Deviance	634,6393
Restr. deviance	667,2720	Restr. Log likelihood	-333,6360
LR statistic	32,63270	Avg. log likelihood	-0,652921
Prob (LR statistic)	0,000004		

Secondary Data, 2023

Based on Table 2, it is known that the McFadden R-Squared value is 0.0489. That is, the investment efficiency variable that can be explained by audit quality and managerial ownership variables is 4.89% while the remaining 95.11% is explained by other variables outside the research model. This shows that there are still many other factors that can affect the efficiency of a company's investment (Daniels & Booker, 2011; Zahmatkesh & Rezazadeh, 2017).

Hypothesis Testing

In this study, firm size (Z) is used as a moderating variable. The testing criterion in this study was to use the confidence level used was 95% and the significance level used was 5% ($\alpha = 0.05$). If the results show that the level of significance is > 0.05 then accept H0. Conversely, if the results show that the level of significance is <0.05, then H0 is rejected. The results of the hypothesis test are presented in Table 3 below.

Table 3
Moderated Regression Analysis

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Constant	-1.578792	0.763094	-2.068936	0.0386
Audit Quality	2.498736	0.492056	1.674694	0.0940
Managerial ownership	1.068125	0.430010	2.483951	0.0130
Firm size	0.110777	0.051550	2.178918	0.0316
Audit Quality*Firm size	-0.169781	0.093374	-1.818288	0.0690

Managerial Ownership*Firm size	0.237477	0.104038	2.282584	0.0225

Secondary Data, 2023

Audit quality on investment efficiency

The results of data analysis show that the audit quality variable (X1) has a coefficient value of 2.498736 and a probability value of 0.0940 which is greater than 0.05. These results indicate that H¬0 is accepted and H1 is rejected. This means that audit quality partially has no effect on the efficiency of the company's investment (Himmelberg et al., 1999; Florackis et al., 2009).

Managerial ownership on investment efficiency

The managerial ownership variable (X2) has a coefficient value of 1.068125 and a probability value of 0.0130 which is smaller than 0.05. These results indicate that H¬0 is rejected and H2 is accepted. This means that managerial ownership partially has a positive effect on the company's investment efficiency.

Firm size moderate audit quality on investment efficiency

In the interaction between audit quality (X1) and firm size (Z) it produces a probability value of 0.0690 greater than 0.05. These results indicate that H¬0 is accepted and H3 is rejected. This means that the relationship between audit quality and investment efficiency does not get additional effect after entering the moderating variable of firm size. So it can be said that the variable firm size does not moderate the effect of audit quality on investment efficiency (Coviello et al., 2000; Shefer & Frenkel, 2005).

Firm size moderate managerial ownership on investment efficiency

The interaction between managerial ownership (X2) and firm size (Z) produces a probability value of 0.0225, which is less than 0.05. These results indicate that H¬0 is rejected and H4 is accepted. This means that the relationship between managerial ownership and investment efficiency gets an additional effect after including the moderating variable of firm size. So, it can be said that the firm size variable strengthens the effect of managerial ownership on investment efficiency (Elaoud & Jarboui, 2017; Lara et al., 2016).

4 Conclusion

This study contributes to increasing knowledge, understanding, and adding references related to agency theory in explaining the relationship between audit quality and managerial ownership on investment efficiency with firm size as a moderator. The results of this study provide additional information that strengthens agency theory regarding the importance of managerial ownership of investment efficiency. In addition, firm size strengthens the effect of managerial ownership on investment efficiency because managerial ownership in large firms can reduce as much as possible the agency problems that occur in large firms and facilitate monitoring of investment decisions. The results of this study provide relevant information for investors in making investment decisions. The implication that can be applied to shareholders or investors is that investors and potential investors should pay attention to the balance of information that will be received from the management of the company so that they can make the best decisions for the interests of investors and potential investors in the future, especially decisions related to the investments they want to make. done by the company to be efficient so as to provide optimal returns.

This research provides practical implications for management in determining policies and decisions regarding the influence of audit quality, managerial ownership and its relation to investment efficiency and firm size as a moderator. The research results contribute to providing information that the existence of an appropriate managerial ownership scale will have an impact on increasing company performance and company investment activities efficiently. In addition, for companies with large sizes to consider the proportion of managerial share ownership because it relates to the control that will be carried out, especially regarding efficient company investment decisions. The practical implications obtained from the results of this research for the government can contribute to the investment policies of

large companies so that consideration is given to provisions regarding managerial ownership, especially in large companies so that it will have an impact on efficient company investment.

Conflict of interest statement
The authors declared that they have no competing interests.

Statement of authorship
The authors have a responsibility for the conception and design of the study. The authors have approved the final article.

Acknowledgments
We are grateful to two anonymous reviewers for their valuable comments on the earlier version of this paper.

References

Adityasih, T. (2010). Analisa pengaruh pendidikan profesi, pengalaman auditor, jumlah klien (audit capacity), dan ukuran kantor akuntan publik terhadap kualitas audit. *Library UI*.

Anela, F. L., & Prasetyo, A. B. (2020). The effect of ownership structure on investment efficiency (Case study in non financial firms listed on Indonesia Stock Exchange in 2015-2017). *ACCRUALS (Accounting Research Journal of Sutaatmadja)*, *4*(01), 66-76.

Apriliani, M. T., & Dewayanto, T. (2018). Pengaruh tata kelola perusahaan, ukuran perusahaan dan umur perusahaan terhadap kinerja perusahaan. *Diponegoro Journal of Accounting*, *7*(1).

Bae, G. S., Choi, S. U., Dhaliwal, D. S., & Lamoreaux, P. T. (2017). Auditors and client investment efficiency. *The Accounting Review*, *92*(2), 19-40.

Bedard, J. C., Johnstone, K. M., & Smith, E. F. (2010). Audit quality indicators: A status update on possible public disclosures and insights from audit practice. *Current Issues in Auditing*, *4*(1), C12-C19.

Biddle, G. C., Hilary, G., & Verdi, R. S. (2009). How does financial reporting quality relate to investment efficiency?. *Journal of accounting and economics*, *48*(2-3), 112-131.

Boubaker, S., Houcine, A., Ftiti, Z., & Masri, H. (2018). Does audit quality affect firms' investment efficiency?. *Journal of the Operational Research Society*, *69*(10), 1688-1699.

Butar-Butar, S. (2022). Managerial Characteristics and Investment Efficiency: Evidence from Indonesian Listed Companies. *Jurnal Dinamika Akuntansi dan Bisnis*, *9*(2), 189-204.

Bzeouich, B., Lakhal, F., & Dammak, N. (2019). Earnings management and corporate investment efficiency: does the board of directors matter?. *Journal of Financial Reporting and Accounting*.

Cao, Y., Dong, Y., Lu, Y., & Ma, D. (2020). Does institutional ownership improve firm investment efficiency?. *Emerging Markets Finance and Trade*, *56*(12), 2772-2792.

Chen, C. J., & Yu, C. M. J. (2012). Managerial ownership, diversification, and firm performance: Evidence from an emerging market. *International Business Review*, *21*(3), 518-534.

Chen, N., Sung, H. C., & Yang, J. (2017). Ownership structure, corporate governance and investment efficiency of Chinese listed firms. *Pacific Accounting Review*.

Chen, Q., Jiang, X., & Zhang, Y. (2019). The effects of audit quality disclosure on audit effort and investment efficiency. *The Accounting Review*, *94*(4), 189-214.

Chen, S., Li, Z., Han, B., & Ma, H. (2021). Managerial ability, internal control and investment efficiency. *Journal of Behavioral and Experimental Finance*, *31*, 100523.

Chen, T., Xie, L., & Zhang, Y. (2017). How does analysts' forecast quality relate to corporate investment efficiency?. *Journal of corporate finance*, *43*, 217-240.

Coviello, N. E., Brodie, R. J., & Munro, H. J. (2000). An investigation of marketing practice by firm size. *Journal of business venturing*, *15*(5-6), 523-545. https://doi.org/10.1016/S0883-9026(98)00035-4

Dang, C., Li, Z. F., & Yang, C. (2018). Measuring firm size in empirical corporate finance. *Journal of banking & finance*, *86*, 159-176.

Daniels, B. W., & Booker, Q. (2011). The effects of audit firm rotation on perceived auditor independence and audit quality. *Research in Accounting Regulation*, *23*(1), 78-82. https://doi.org/10.1016/j.racreg.2011.03.008

de Guevara, J. F., Maudos, J., & Salvador, C. (2022). Firms' investment, indebtedness and financial constraints: Size does matter. *Finance Research Letters*, *46*, 102240.

DeAngelo, L. E. (1981). Auditor size and audit quality. *Journal of accounting and economics*, *3*(3), 183-199.

DeAngelo, L. E. (1981). Auditor size and audit quality. *Journal of accounting and economics*, *3*(3), 183-199. https://doi.org/10.1016/0165-4101(81)90002-1

Elaoud, A., & Jarboui, A. (2017). Auditor specialization, accounting information quality and investment efficiency. *Research in International Business and Finance*, *42*, 616-629.

Elaoud, A., & Jarboui, A. (2017). Auditor specialization, accounting information quality and investment efficiency. *Research in International Business and Finance*, *42*, 616-629. https://doi.org/10.1016/j.ribaf.2017.07.006

Erawati, N. M. A., Sutrisno, T., HARIADI, B., & SARASWATI, E. (2021). The role of corporate social responsibility in the investment efficiency: is it important?. *The Journal of Asian Finance, Economics and Business (JAFEB)*, *8*(1), 169-178.

Firawan, P. A., & Dewayanto, T. (2021). PENGARUH KUALITAS AUDIT DAN KUALITAS PELAPORAN KEUANGAN TERHADAP EFISIENSI INVESTASI PADA PERUSAHAAN MANUFAKTUR YANG TERDAFTAR DI BEI PADA TAHUN 2017–2019. *Diponegoro Journal of Accounting*, *10*(4).

Firmansyah, A., & Triastie, G. A. (2020). The role of corporate governance in emerging market: Tax avoidance, corporate social responsibility disclosures, risk disclosures, and investment efficiency. *Journal of Governance and Regulation*, *9*.

Florackis, C., Kostakis, A., & Ozkan, A. (2009). Managerial ownership and performance. *Journal of business research*, *62*(12), 1350-1357. https://doi.org/10.1016/j.jbusres.2008.12.001

Francis, J. R., & Yu, M. D. (2009). Big 4 office size and audit quality. *The accounting review*, *84*(5), 1521-1552.

Guthrie, G., & Hobbs, C. (2021). How managerial ownership and the market for corporate control can improve investment timing. *Journal of Banking & Finance*, *128*, 106154.

Hammami, A., & Hendijani Zadeh, M. (2020). Audit quality, media coverage, environmental, social, and governance disclosure and firm investment efficiency: Evidence from Canada. *International Journal of Accounting & Information Management*, *28*(1), 45-72.

Hanazaki, M., & Liu, Q. (2007). Corporate governance and investment in East Asian firms—empirical analysis of family-controlled firms. *Journal of Asian Economics*, *18*(1), 76-97.

Harjito, D. A., & Nurfauziah, N. (2006). Hubungan Kebijakan Hutang, Insider Ownership dan Kebijakan Dividen dalam Mekanisme Pengawasan Masalah Agensi di Indonesia. *Jurnal Akuntansi dan Auditing Indonesia*, *10*(2).

Himmelberg, C. P., Hubbard, R. G., & Palia, D. (1999). Understanding the determinants of managerial ownership and the link between ownership and performance. *Journal of financial economics*, *53*(3), 353-384. https://doi.org/10.1016/S0304-405X(99)00025-2

Hou, F., Li, M., Xu, Y., & Zhou, S. (2023). Signing auditors' cultural background and client investment efficiency. *Finance Research Letters*, *51*, 103417.

Islami, M. N. (2019). Effect of the Quality of Financial Statements, Foreign Ownership, Frequency of Audit Committee Meeting, and Specialty Industrial Efficiency Investment of Auditors. *JAAF (Journal of Applied Accounting and Finance)*, *1*(1), 9-26.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, *3*(4), 305-360.

Kadapakkam, P. R., Kumar, P. C., & Riddick, L. A. (1998). The impact of cash flows and firm size on investment: The international evidence. *Journal of banking & Finance*, *22*(3), 293-320.

Lai, K. W. (2009). Does audit quality matter more for firms with high investment opportunities?. *Journal of Accounting and Public Policy*, *28*(1), 33-50.

Lara, J. M. G., Osma, B. G., & Penalva, F. (2016). Accounting conservatism and firm investment efficiency. *Journal of Accounting and Economics*, *61*(1), 221-238. https://doi.org/10.1016/j.jacceco.2015.07.003

Li, P. Y. (2018). Top management team characteristics and firm internationalization: The moderating role of the size of middle managers. *International Business Review*, *27*(1), 125-138.

Maryanti, E., Biduri, S., & K., H. M. (2022). Apakah Ukuran Perusahaan Sebagai Variabel Moderasi? Jurnal Akuntansi Integratif, 8(1), 33–43.

Meitari, I. G. A. A., & Astika, I. B. P. (2021). Kepemilikan Asing Memoderasi Pengaruh Kualitas Laporan Keuangan dan Efisiensi Investasi. E-Jurnal Akuntansi, 31(8), 1973.

Mudjijah, S., Khalid, Z., & Astuti, D. A. S. (2019). Pengaruh kinerja keuangan dan struktur modal terhadap nilai perusahaan yang dimoderasi variabel ukuran perusahaan. *Jurnal Akuntansi Dan Keuangan*, *8*(1), 41-56.

Nathaniel, A. S., & Butar, S. B. (2019). Determinan Efisiensi Investasi Perusahaan Publik di Indonesia. *Jurnal Akuntansi Bisnis*, *17*(2), 192.

Nor, N. H. M., Nawawi, A., & Salin, A. S. A. P. (2017). The influence of board independence, board size and managerial ownership on firm investment efficiency. *Pertanika Journal of Social Science and Humanities*, *25*(3), 1039-1058.

Pandansari, I. M., & Yuyetta, E. N. A. (2016). Pengaruh Kepemilikan Manajerial, Kepemilikan Institusional dan Kebijakan Dividen Terhadap Nilai Perusahaan dengan Kebijakan Hutang Sebagai Variabel Intervening. *Diponegoro Journal Of Accounting*, *5*(3).

Park, H. Y., Chae, S. J., & Cho, M. K. (2016). Controlling shareholders' ownership structure, foreign investors' monitoring, and investment efficiency. *Investment Management and Financial Innovations*, (13, Iss. 3 (contin. 1)), 159-170.

Park, S., Kim, I., & Kim, W. (2017). Investment efficiency between listed and unlisted firms, and big 4 audit firms' effect: Evidence from Korea. *Journal of Applied Business Research (JABR)*, *33*(6), 1095-1112.

Raguseo, E., Vitari, C., & Pigni, F. (2020). Profiting from big data analytics: The moderating roles of industry concentration and firm size. *International Journal of Production Economics*, *229*, 107758.

Rashed, A., Abd El-Rahman, E., Isamil, E., & Abd El-Samea, D. (2018). Ownership structure and investment efficiency: Evidence from Egypt. *International Journal of Accounting and Financial Reporting*, *8*(4), 1-22.

Santoso, A., & Susilowati, T. (2020). Ukuran Perusahaan Memoderasi Pengaruh Struktur Modal Terhadap Nilai Perusahaan. Adbis: Jurnal Administrasi Dan Bisnis, 13 (2), 156.

Sari, L. I. N., & Suaryana, I. G. N. A. (2014). Pengaruh kualitas laporan keuangan pada efisiensi investasi perusahaan pertambangan. *E-Jurnal Akuntansi Universitas Udayana*, *8*(3), 524-537.

Shahzad, F., Rehman, I. U., Hanif, W., Asim, G. A., & Baig, M. H. (2019). The influence of financial reporting quality and audit quality on investment efficiency: Evidence from Pakistan. *International Journal of Accounting & Information Management*.

Shefer, D., & Frenkel, A. (2005). R&D, firm size and innovation: an empirical analysis. *Technovation*, *25*(1), 25-32. https://doi.org/10.1016/S0166-4972(03)00152-4

Simanungkalit, E. R. (2017). Pengaruh tata kelola perusahaan dan struktur kepemilikan terhadap efisiensi investasi perusahaan. *Jurnal Akuntansi Bisnis*, *15*(2), 179-199.

Sinaga, D. M., & Ghozali, I. (2012). *Analisis pengaruh audit tenure, ukuran KAP dan ukuran perusahaan klien terhadap kualitas audit* (Doctoral dissertation, Fakultas Ekonomika dan Bisnis).

Singh, M., & Davidson III, W. N. (2003). Agency costs, ownership structure and corporate governance mechanisms. *Journal of banking & finance*, *27*(5), 793-816.

Soliman, W. S. M. K. (2020). Investigating the effect of corporate governance on audit quality and its impact on investment efficiency. *Investment Management and Financial Innovations*, *17*(3), 175-188.

Stoel, D., Havelka, D., & Merhout, J. W. (2012). An analysis of attributes that impact information technology audit quality: A study of IT and financial audit practitioners. *International Journal of Accounting Information Systems*, *13*(1), 60-79. https://doi.org/10.1016/j.accinf.2011.11.001

Sun, K. (2014). *The relationship between ownership structure and investment efficiency in China-focusing on SOEs and foreign owned enterprises*. Georgetown University.

Vijayakumaran, R. (2021). Impact of managerial ownership on investment and liquidity constraints: Evidence from Chinese listed companies. *Research in International Business and Finance*, *55*, 101321.

Wardhani, R. (2017). Pengaruh efektivitas dewan komisaris, komite audit dan kepemilikan institusional terhadap efisiensi investasi. *Jurnal Akuntansi dan Auditing Indonesia*, *21*(1), 24.

Watts, R. L., & Zimmerman, J. L. (1978). Towards a positive theory of the determination of accounting standards. *Accounting review*, 112-134.

Watts, R. L., & Zimmerman, J. L. (1983). Agency problems, auditing, and the theory of the firm: Some evidence. *The journal of law and Economics*, *26*(3), 613-633.

Zahmatkesh, S., & Rezazadeh, J. (2017). The effect of auditor features on audit quality. *Tékhne*, *15*(2), 79-87. https://doi.org/10.1016/j.tekhne.2017.09.003