

Research Article

Determinants of Firm Value with Environmental Performance as a Moderating

Ignatius Bayu Kuncoro^{1*}, Pardomuan Sihombing²

^{1,2} Faculty of Economics and Business, Mercu Buana University, Jakarta

Received: 04-01-2025; Accepted: 25-02-2025

Abstract

This research examines the influence of Leverage, Liquidity, Profitability, and Institutional Ownership on Firm Value, with Environmental Performance as a moderating variable. The study focuses on coal sub-sector companies listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023. Using purposive sampling, 14 companies were selected as research samples. Panel data regression analysis was employed. The findings reveal that Leverage and Institutional Ownership do not affect Firm Value. Liquidity negatively affects Firm Value, while Profitability has a positive impact. Environmental Performance does not directly influence Firm Value but moderates certain relationships. Specifically, Environmental Performance strengthens the effect of Liquidity and Profitability on Firm Value but does not moderate the impact of Leverage. The study's managerial implications highlight the importance of fundamental factors such as profitability, leverage, and dividend policy in enhancing Firm Value. Additionally, companies should recognize Environmental Performance as a moderating factor that can reinforce certain financial influences. Management is encouraged to adopt sustainable business practices to improve both financial performance and environmental responsibility.

Keywords: Leverage, Liquidity Profitability, Institutional Ownership, Environmental Performance, Firm Value

JEL Classification: G32, M14, Q56

How to cite: Kuncoro, I. B., Sihombing, P., (2025). Determinants of Firm Value with Environmental Performance as a Moderating. *Research of Business and Management*, 3(1), 41–50.

Corresponding author: Ignatius Bayu Kuncoro (ignatiusbayukuncoro@gmail.com)



This is an open-access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) international license.

1. Introduction

Indonesia is a significant player in the global coal market, with regions such as Kalimantan serving as key contributors to the country's coal mining sector. Historically, Kalimantan has been recognized for its substantial coal and mineral production in Indonesia (Hilmawan & Amalia, 2020). East Kalimantan, in particular, is a central area for coal mining operations, further solidifying its position as a vital coal-producing region within the country (Afkarina et al., 2019). These areas are essential in establishing Indonesia's reputation as a major force in the global coal market, backed by abundant coal resources (Monica, 2023).

The rising demand for coal, both in Indonesia and globally, has led to more comprehensive studies on the sustainability of the industry and its environmental impact. Indonesia is a key player in the coal export market, supplying various Asian countries such as China, India, South Korea, Japan, Thailand, the Philippines, and Malaysia (Susanto & Admi, 2021). This robust export demand has spurred growth in coal production across Indonesia, resulting in consistent sector expansion over recent years. However, this growth has also raised significant concerns regarding the environmental repercussions of coal mining and the urgent need for sustainable practices within the industry.

According to signaling theory, firm management communicates with the market by providing relevant information about the firm's financial performance. When a firm performs well, management typically sends positive signals through means such as financial reports, dividend distributions, or increased profitability. These positive signals enhance investor confidence, resulting in a higher demand for shares and an increase in the firm's market value. A firm's performance, often reflected in its stock price, is a crucial indicator of its overall value (Kussuma et al., 2017). Investors are generally attracted to companies with strong profitability and high stock prices, establishing a positive relationship between profitability, stock prices, and firm value (Kussuma et al., 2017).

The esteem of a firm isn't fair, a portrayal of its current budgetary condition but moreover a reflection of its prospects. For financial specialists, the esteem of a firm gets to be an critical determinant that reflects the potential for productivity development (Santosa et al., 2022) (Umam et al., 2019). The increment in firm esteem is an accomplishment craved by the firm proprietors since, with the increment in firm esteem, the welfare of the proprietors will moreover move forward. The proprietors of the firm anticipate a tall book esteem since it reflects a tall level of thriving for the shareholders (Nopianti et al., 2021).

This considers points to analyze the variables that influence firm esteem within the coal segment in Indonesia by considering environmental execution as a directing variable. Within the setting of an industry that has critical natural impacts, understanding how natural execution can reinforce or debilitate the relationship between leverage, liquidity, productivity, and regulation proprietorship on firm value gets to be pivotal. The most commitment to this consider is to supply experimental knowledge into the part of natural execution in expanding a company's allure to speculators, particularly in divisions that have tall supportability challenges. Hence, the comes about of this ponder can give implications for corporate supervisors in creating more economical money related techniques and for controllers in planning arrangements that empower the execution of naturally neighborly commerce hones.

2. Literature Review and Hypothesis

Signaling Theory

Signaling theory examines how firms utilize signals to convey information to the market, particularly in situations characterized by uncertainty regarding the value and risk of investments. In this framework, asymmetric information arises when one party possesses more or superior information than another, a common occurrence between firm management and investors (Santosa et al., 2021). This theory is crucial in the financial realm, as the information transmitted through financial statements and other managerial decisions can significantly impact investment choices and overall firm value. Research indicates that companies capable of delivering positive signals through strong financial performance tend to attract more investment and enhance their market value (Setiawanta & Hakim, 2019; Pebriawan et al., 2022).

Agency Theory

Agency theory is an important framework for understanding the relationship between principals and agents in the context of finance and accounting. This theory explains the conflict of interest that arises from the separation of ownership and management, where the principal (owner) relies on the agent (management) to manage their resources. In this context, the agent has better information about the firm's operations, which can lead to information asymmetry and potential abuse of authority. (Djatnika, 2022). Agency theory provides valuable insights into understanding

the dynamics of the relationship between owners and management, both in the public and private sectors. By applying the principles of this theory, organizations can improve financial performance and reduce the risks associated with conflicts of interest.

Firm Value

The theory of firm value, especially as measured by Price to Book Value (PBV), is an important aspect of financial analysis used to assess a firm's performance and investment potential. Research shows that PBV is often used as an indicator to attract investor interest, where companies with high PBV are considered to have good financial performance and promising growth prospects (Irmawati & Murtianingsih, 2024)(Santosa, 2020).

Hypothesis

Leverage

Use could be a budgetary proportion that evaluates a firm's capacity to fulfill its money related commitments, enveloping both short-term and long-term obligation. The firm's capital structure, which reflects the blend of obligation and value utilized for financing, plays a significant part in deciding its overall esteem. A better dependence on obligation can signal certainty to the showcase; it proposes that the administration accepts within the firm's development prospects and is willing to require on extra dangers by expanding use. This positive flag may provoke financial specialists to reply favorably, possibly driving to an increment in stock costs or by and large firm esteem. This declaration is encourage backed by past research conducted by Pardiastuti, P., Fajri, R. N., & Samrotun, Y. C. (2020), Abideen (2023), all of which demonstrate that use includes a essentially positive affect on firm esteem.

H1: Leverage has a positive effect on firm value

Liquidity

Tall liquidity of the firm comes about within the firm having abundance resources that can emphatically impact the firm's venture and capital structure. Based on flag hypothesis, a firm's capacity to meet its short-term commitments will get a positive reaction from the capital advertise since it is considered competent of keeping up the firm's execution, which can lead to an increment within the firm's esteem. This result is backed by the investigate of Abideen (2023) and Nofika & Nurhayati (2022), which states that liquidity features a altogether positive impact on the esteem of the firm.

H2: Liquidity has a positive effect on firm value

Profitability

Productivity reflects the rate of return on speculation against the firm's resources. Tall productivity reflects the firm's capacity to create noteworthy returns for shareholders. Tall benefit reflects the firm's capacity to create noteworthy benefits for shareholders. Based on the signaling hypothesis, companies with tall benefit levels send positive signals to the advertise and financial specialists. With a tall benefit proportion, a firm will pull in speculator intrigued to contribute their capital within the firm. This result is backed by past inquire about by Nofika, S., & Nurhayati, I. (2022), Pardiastuti, P., Fajri, R. N., & Samrotun, Y. C. (2020).

H3: Profitability has a positive effect on firm value

Institutional Ownership

Regulation possession is the possession of firm offers by budgetary educate such as benefits reserves, protections companies, and shared reserves. Regulation proprietorship can give stricter oversight of administration, as regulation speculators have the motivation to guarantee that the firm is overseen successfully and effectively to maximize shareholder esteem. The nearness of critical organization financial specialists can upgrade showcase certainty within the firm. This condition is since regulation speculators by and large have way better data and in-depth investigation some time recently contributing in a firm. Tall regulation proprietorship decreases office clashes since regulation investors have noteworthy control to supervise directors. This result is backed by inquire about by Suhandi (2021), which states that organization possession features a positive impact on firm esteem.

H4: Institutional ownership has a positive effect on firm value

Environmental Performance

The firm's natural execution is an accomplishment for the firm in executing care for its encompassing environment to diminish contamination and natural harm caused by the firm's operational exercises. Companies that unveil natural execution data well in their yearly reports will get positive reactions from financial specialists, demonstrating that the firm has satisfied its commitments, in this manner expanding the firm's esteem. A tall Legitimate rating (for case, gold or green) signals that the firm has great natural administration and complies with strict directions. This result is upheld by investigate by Daromes and Kawilarang (2020), which states that natural execution emphatically influences firm esteem.

H5: Environmental performance has a positive effect on firm value

Companies with great natural execution can be more trusted by financial specialists, indeed if they have tall use. This positive notoriety can decrease the dangers craved by financial specialists, subsequently expanding the firm's esteem. Companies with solid natural execution can be way better at overseeing in general dangers, counting dangers related with tall use. This natural execution can decrease the market's recognition of chance and increment the firm's esteem. Great natural execution is anticipated to direct (alter) the Effect of use on the firm's esteem. For illustration, in high-leverage conditions, companies with great natural execution may involvement a lower negative effect on their firm esteem compared to companies with destitute natural execution.

H6: Environmental performance can moderate the effect of leverage on Firm Value

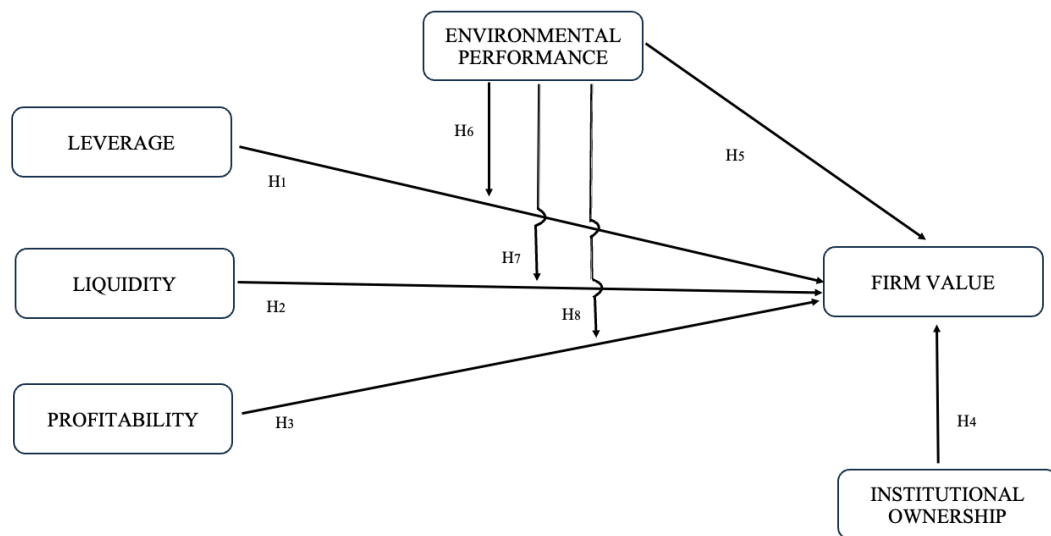
Great natural execution can fortify the relationship between liquidity and firm esteem by improving the firm's notoriety within the eyes of financial specialists. Companies that are well-managed in terms of liquidity and the environment can be considered more secure and more economical ventures, subsequently pulling in speculator intrigued and possibly expanding the firm's esteem. Companies with great natural execution are more proactive in overseeing dangers, which can diminish the negative effect of liquidity insecurity. The proactive can improve investors' recognition of the firm's solidness and long-term esteem. Natural execution can direct the relationship between liquidity and firm esteem, meaning that great natural execution can fortify the positive effect of liquidity on firm esteem.

H7: Environmental performance can moderate the effect of liquidity on Firm Value

Natural execution is seen as a sign of the firm's social duty. Though, natural execution must be kept up at a great level because it reflects the firm's concern for the environment in which it works. Natural execution, through different natural measurements such as eco-friendly hones, compliance with natural directions, or green innovation advancements, has the potential to impact the relationship between a firm's productivity and its esteem. In other words, natural execution is considered a directing variable that influences the quality and heading of the relationship between benefit and firm esteem. This directing demonstrates that the effect of productivity on firm esteem can change depending on the level or quality of the firm's natural execution. These comes about are bolstered by past investigate by Pramono & Rohman (2023), which states that natural execution can fortify the effect of Return on Resources (ROA) on firm esteem.

H8: Environmental performance can moderate the effect of profitability on Firm Value**3. Data and Method**

This study employs a quantitative methodology. The population includes all 28 coal mining firms listed on the Indonesia Stock Exchange. Purposive sampling is used to retrieve data. The research utilizes secondary data available at www.idx.co.id, which comprises cross-sectional and time series data. The analysis is conducted using the e-views program with panel data.



Picture 1. The analysis is conducted using the e-views program with panel data

Based on these variables, the panel data regression equation in this study can be formulated as follows: Based on these variables, the panel data regression equation in this study can be formulated as follows:

$$PBV = \alpha + \beta_1 DER_{it} + \beta_2 CR_{it} + \beta_3 ROA_{it} + \beta_4 KI_{it} + \beta_5 PROPER_{it} + \beta_6 DER * PROPER + \beta_7 CR * PROPER + \beta_8 ROA * PROPER + \varepsilon \quad (1)$$

Where: firm value = PBV (stock price/book value); leverage = DER (total debt/total equity); liquidity = CR (current assets/current liabilities); profitability = ROA (earning after tax/total assets); institutional ownership = the number of shares owned by institutions/number shares of outstanding; environmental performance = result PROPER.

4. Results

Data description

The research variables are described by their maximum value, minimum value, average value (mean), and standard deviation. These data are obtained from the annual reports of coal mining firms that served as samples for the research, covering the period from 2019 to 2023.

Table 1. Descriptive statistic

	PBV	DER	CR	ROA	KI	PROPER
Mean	2.4782	0.9915	1.5596	0.1591	0.0402	3.8571
Maximum	19.770	3.8309	5.3578	0.6025	0.3000	5.0000
Minimum	0.2800	0.0493	0.2029	-0.2599	0.0000	3.0000
Std. Dev.	3.1924	0.8505	1.0810	0.1762	0.0860	0.7476

Table 1 provides the characteristics of each variable used in this study. The dependent variable, firm value, represented by Price to Book Volume (PBV), has a minimum value of 0.2800, a maximum value of 19.770, and a mean value of 2.4782. The moderating variable, environmental performance (PROPER), has a minimum value of 3.000 and a maximum value of 5.0000, and a mean value of 3.8571.

Board information relapse examination can utilize three demonstrate approaches; to be specific the Common Impact Show, Settled Impact Show, and Irregular Impact Demonstrate estimation tests. From these 3 show approaches, the foremost fitting impact to be utilized for performing board information relapses will be determined. In deciding the foremost suitable show in this think about

performing board information relapses, tests will be conducted on each demonstrate utilizing the Chow test, the Hausman test, and the Lagrange Multiplier test. The results of the tests can be seen within the taking after table:

Table 2. Results of the Best Panel Data Model

Test	Test Criteria	Statistic	Prob.	Decision
Chow	Cross-section F	4.744864	0.0000	FEM
Hausman	Cross-section random	22.417792	0.0004	FEM
Lagrange Multiplier	Breusch-Pagan	6.191741	0.0128	REM

The results of the three panel model tests conducted in this study show that the best model is the Fixed-Effect Model.

Hypothesis test

The comes about of the demonstrate fit test utilizing the Settled Impact Demonstrate from the table underneath appear that the F-statistic gotten is $0.000 < 0.05$, which permits us to conclude that the free factors in this consideration will collectively impact the subordinate variable. It can too be seen that the R-squared in this consider is 0.7334, meaning that the autonomous factors in this ponder will influence the subordinate variable by 73.34%. In comparison, the remaining 26.6% comes from the impact of other factors. The comes about of the factual tests in this consideration can be summarized within the table underneath.

Table 3. Results of the Best Panel Data Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DER	-0.5353	3.5213	-0.1520	0.8798
CR	-7.1135	2.9638	-2.3956	0.0205
ROA	37.8851	15.092	2.5101	0.0155
KI	4.2078	29.936	0.2009	0.8416
PROPER	-2.9913	3.1989	-0.9350	0.3544
DER_PROPER	0.1667	0.8108	0.2056	0.8379
CR_PROPER	1.5198	0.8692	1.7484	0.0868
ROA_PROPER	-9.7900	4.0658	-2.4078	0.0199
C	15.811	11.740	1.3467	0.1844
F-statistic	5.6279		R-squared	0.7111
Prob(F-statistic)	0.0000		Adjusted R-squared	0.5484

5. Discussion

The effect of leverage on firm value

In a non-significant relapse, this recommends that use isn't considered a basic variable by speculators when surveying a firm's esteem. Concurring to the Modigliani and Mill operator (MM) hypothesis, beneath perfect advertise conditions, use does not impact a firm's esteem. This hypothesis sets that a firm's esteem is directed exclusively by its capacity to create benefits, independent of whether its financing comes from value or obligation. In productive advertising, varieties in leverage whether tall or low will not altogether affect valuation, as the potential for expanded returns can adjust the extra dangers related to obligation. The discoveries of this consider adjust with the investigation, all of which show that use does not influence a firm's value.y.

The effect of liquidity on firm value

The current proportion measures a firm's liquidity, which is the capacity to meet its short-term commitments utilizing current resources. When the current proportion is as well tall, it can be translated that the firm is holding as well numerous current resources, such as cash or stock, which are not being utilized proficiently to improve productivity or development. This liquidity

can lower investors' discernment of the firm's esteem. The negative impact of the current proportion on the esteem of the firm demonstrates that a too much tall liquidity level can be considered a frame of wastefulness, which in turn decreases the firm's allure within the eyes of investors. Investors are more fascinated by companies that can utilize current resources more successfully for development or ventures that surrender benefits. The comes about of this think about are in line with the inquiry conducted by Abideen (2023), which states that liquidity influences the esteem of the firm.

The effect of profitability on firm value

ROA measures the firm's capacity to produce benefit from its possessed resources. The higher the ROA esteem, the more proficient the firm is in utilizing its resources to produce benefits. In this case, financial specialists tend to discover companies with tall ROA more alluring, because it demonstrates that administration is competent of optimizing accessible resources to create steady benefits. The conclusions that come about this consideration are in line with the investigation conducted by Nofika & Nurhayati (2022), Pardiastuti, Fajri & Samroutun (2020), which state that productivity influences firm esteem.

The effect of institutional ownership on firm value

Regulation proprietorship is one of the components that can diminish office clashes, where the institution plays a part in observing the firm's administrative execution. Since the sum of regulation venture is often expansive, supervisors tend to consider its effect on the interface of regulation shareholders. In any case, the investigation comes to appear that the oversight conducted by organization shareholders isn't critical in affecting the firm's esteem. This finding may be due to their need for coordinate inclusion in administrative decision-making, which does not altogether affect the increment in firm esteem. The comes about of this ponder are in line with the investigation conducted by Widianingrum and Dillak (2023), which states that organization possession does not influence the esteem of the firm.

The effect of environmental performance on firm value

Natural execution does not influence the firm's esteem. This result may show that financial specialists don't consider sustainability aspects as the most determinant in assessing a firm. Although Appropriate is an imperative marker that appears a firm's compliance with natural directions in Indonesia, investors' primary center still lies on money related variables such as productivity and cash stream, which more straightforwardly reflect the potential return on speculation. The comes about of this think about are in line with the inquire, which states that natural execution does not influence firm esteem.

The role of environmental performance in moderating the effect of leverage on firm value

Natural execution is incapable of directing the impact of use on firm esteem. Use demonstrates the degree to which a firm employs obligation to fund its operations or extension. Assume natural execution, which relates to the administration of the firm's natural effect, does not direct the impact of use. In that case, this may show that financial specialists don't see included esteem from environmental execution within the setting of the firm's obligation. The firm has great supportability hones, but this is often not sufficient to alter investors seeks on the monetary dangers related to use. The comes about of this think about are in line with the investigate conducted by Him, X., Jiang, S., & Yang, J. (2021), which states that natural execution does not continuously direct the relationship between use and firm esteem, particularly in high-risk segments such as mining.

The role of environmental performance in moderating the effect of liquidity on firm value

Natural execution is able of directing the effect of liquidity on firm esteem. Liquidity reflects the firm's capacity to meet its short-term commitments, which serves as a marker of money-related soundness. When the liquidity held by the firm is combined with great natural execution, financial specialists will see the firm more emphatically. This finding happens since great natural execution reflects the firm's concern for maintainability and natural chance administration. Hence, tall liquidity isn't as it was considered a source of budgetary steadiness but too an

opportunity to bolster economic trade hones. As a result, the firm's esteem will increase since speculators appreciate budgetary execution that adjusts with natural execution. The comes about of this consider are in line with the investigate conducted by Him, X., Jiang, S., & Yang, J. (2021), which states that natural execution (ESG) can fortify the relationship between liquidity and firm esteem, particularly when firms illustrate a solid commitment to supportability hones.

The role of environmental performance in moderating the effect of profitability on firm value

Natural execution can direct the effect of productivity on firm esteem. A tall ROA demonstrates that the firm is effective in utilizing its resources to produce benefit. In any case, when natural execution debilitates the effect of productivity on firm esteem, financial specialists see that the firm has designated portion of its benefits to natural activities. This result appears that in assessing the esteem of a firm, financial specialists don't as it were center on benefit but too on the firm's commitment to keeping up an adjustment between budgetary accomplishment and natural obligation. The conclusions about this consideration are in line with the inquire about conducted by Bouslah et al. (2018), which states that natural execution can direct the impact of productivity on firm esteem, particularly when firms are able to communicate the long-term benefits of natural activities to speculators.

6. Conclusion

Based on the inquire about comes about, it can be concluded that use does not influence firm esteem, whereas liquidity encompasses a negative effect on firm esteem. Alternately, productivity features a positive impact on firm esteem. Organization possession and natural execution don't have a critical impact on firm esteem. In expansion, natural execution cannot direct the impact of use on firm esteem but can reinforce the impact of liquidity and productivity on firm esteem.

The managerial implications of these findings indicate that companies need to focus on increasing profitability through operational efficiency and effective business strategies. More optimal liquidity management is needed so that companies do not hold excessive liquid assets, which can hinder productive investment. Although environmental performance does not have a direct impact on firm value, good environmental management is still important because it can strengthen the relationship between profitability and firm value and reduce the negative impact of excess liquidity. Therefore, companies are advised to implement sustainable business practices that can increase investor confidence and market reputation.

Recommendation

The firm should not hold too many unproductive current assets. Unused funds can be invested in projects or assets that provide higher returns to increase the firm's value. The firm must continuously improve operational efficiency and optimize costs to increase profit margins. This improvement creates more profits that can enhance the attractiveness to investors and the firm's value while maintaining a balance between profitability growth and risk management. The firm can further integrate sustainability aspects into its financial management strategy. With optimally managed liquidity, the firm can allocate funds for environmentally friendly programs. The firm can allocate profits in a balanced manner between sustainability projects and growth investments. In this way, profitability is not excessively disrupted by sustainability expenditures.

References

- Afkarina, L., et al. (2019). Analisis Dampak Pertambangan Batu Bara di Kalimantan Timur. *Jurnal Energi dan Sumber Daya Mineral*, 10(2), 123-135. <https://doi.org/10.7454/jessd.v2i2.1025>
- Bouslah, K., Kryzanowski, L., & M'Zali, B. (2018). "Social performance and firm risk: Impact of the financial crisis." *Journal of Business Ethics*, 149(3), 643-669. <https://doi.org/10.1007/s10551-016-3096-8>
- Daromes, F. E. (2020). Peran Mediasi Pengungkapan Lingkungan Pada Pengaruh Kinerja Lingkungan Terhadap Nilai Perusahaan. *Jurnal Akuntansi*, 14(1), 77-101. <https://doi.org/10.25170/jak.v14i1.1263>

- Difoasih, G., & Sihombing, P. (2023). Financial Distress Solutions through Improved Financial Performance and GCG with CSR as the moderating variable for consumer services companies. *Jurnal Manajemen*, 14(1), 156. <https://doi.org/10.32832/jm-uika.v14i1.9391>
- Djatnika, D. (2022). Dampak karakteristik dewan terhadap profitabilitas bank: bukti empiris di bursa efek indonesia. Ekspansi: Jurnal Ekonomi, Keuangan, Perbankan, Dan Akuntansi, 14(1), 72-83. <https://doi.org/10.35313/ekspansi.v14i1.3703>
- Fairus, M., & Sihombing, P. (2020). The Effect of Good Corporate Governance (GCG) Mechanism on Earnings Management Practices of The Stubben Model (Study Case on Mining Sector Companies Listed on The Indonesia Stock Exchange 2014-2019). *European Journal of Business and Management Research*, 5(6). <https://doi.org/10.24018/ejbmr.2020.5.6.602>
- Gusfriyanto, H., & Sihombing, P. (2024). The Impact of Financial Ratios and Growth Opportunity on Capital Structure A Moderation Role of Firm Size. *International Journal of Digital Marketing Science*, 1(1), 34-44. <https://doi.org/10.54099/ijdms.v1i1.865>
- Hilmawan, R., & Amalia, S. (2020). Coal and mineral and its impact on human development index: An empirical study in south and east Kalimantan region, Indonesia. *International Journal of Energy Economics and Policy*, 10(1), 488-494. <https://doi.org/10.32479/ijep.8711>
- He, X., Jiang, S., & Yang, J. (2021). "Corporate ESG performance and signaling effects: Evidence from Chinese firms." *Journal of Business Ethics*, 174(3), 567-588. <https://doi.org/10.1007/s10551-020-04620-3>
- Irmawati, S. and Murtianingsih, M. (2024). Analisis determinan faktor nilai perusahaan. *Jurnal Ilmiah Manajemen, Ekonomi, & Akuntansi (MEA)*, 8(2), 1553-1573. <https://doi.org/10.31955/mea.v8i2.4204>
- Kusumastuti, A. D., Mutiasari, A. I., & Paningrum, D. (2022). Evaluasi kinerja perusahaan selama pandemi covid-19 melalui pendekatan economic value added (eva) dan market value added (mva) dengan time series approach (studi pada perusahaan lq45 sub sektor property and real estate yang terdaftar di bursa efek indonesia periode tahun 2019 - 2020). *Jurnal Pendidikan Akuntansi Indonesia*, 20(1), 88-98. <https://doi.org/10.21831/jpai.v20i1.51565>
- Jensen, M. C., Meckling, W. H., Benston, G., Canes, M., Henderson, D., Leffler, K., Long, J., Smith, C., Thompson, R., Watts, R., & Zimmerman, J. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. In *Journal of Financial Economics* (Issue 4). Harvard University Press. <http://hupress.harvard.edu/catalog/JENTHF.html>
- Lou, J., & Hilde, T. (2023). *Evaluating the Viability of Co-Firing Biomass Waste to Mitigate Coal Plant Emissions in Indonesia*. <https://doi.org/10.21203/rs.3.rs-3481484/v1>
- Monica, F., Fitri, M. M., Umar, I., Amran, A., & Gusman, M. (n.d.). *Distribution of Potential Resources, Reserves and Use of Coal in Indonesia*. <http://senjop.ppj.unp.ac.id/index.php/senjop>
- Nofika, S., & Nurhayati, I. (2022). faktor- faktor yang mempengaruhi nilai perusahaan dengan kebijakan dividen sebagai variabel moderasi. *Owner*, 6(1), 828-845. <https://doi.org/10.33395/owner.v6i1.677>
- Nopianti, R., Komarudin, M. F., & Triana, L. (2023). Pengaruh Leverage dan Likuiditas terhadap Nilai Perusahaan dengan Pemoderasi Umur Perusahaan. *Owner*, 7(3), 2566-2576. <https://doi.org/10.33395/owner.v7i3.1607>
- Pardiastuti, P., Samrotun, Y. C., & Fajri, R. N. (2020). Faktor-Faktor yang Mempengaruhi Nilai Perusahaan pada Perusahaan Manufaktur Sektor Industri Barang Konsumsi yang Terdaftar di BEI Periode 2016-2018. *Owner: Riset Dan Jurnal Akuntansi*, 4(2), 337-345. <https://doi.org/10.33395/owner.v4i2.210>
- Pebriawan, N., Damaianti, I., & Devi, W. S. G. R. (2022). Pengaruh profitabilitas dan struktur modal terhadap nilai perusahaan pada perusahaan sektor keuangan yang terdaftar di bursa efek indonesia periode 2016-2020. *Ekonam: Jurnal Ekonomi, Akuntansi & Manajemen*, 4(1), 9-17. <https://doi.org/10.37577/ekonam.v4i1.485>
- Pramono, H., & Rohman, A. (2023). *The role of environmental performance in strengthening firm values to financial performance* (Vol. 21, Issue 2). <http://jurnalnasional.ump.ac.id/index.php/kompartemen/>
- Santosa, P. W. (2020). The moderating role of firm size on financial charactersitics and Islamic firm value at Indonesian equity market. *Business: Theory and Practice*, 21(1), 391-401. <https://doi.org/10.3846/btp.2020.12197>

- Santosa, P. W., Rahayu, S. I., Simon, Z. Z., & Tambunan, M. E. (2021). The moderating role of audit quality and firm size in the effect of corporate governance on related party transactions: Evidence from Indonesia. *Investment Management and Financial Innovations*, 18(4), 166–176. [https://doi.org/10.21511/imfi.18\(4\).2021.15](https://doi.org/10.21511/imfi.18(4).2021.15)
- Santosa, P. W., Setianingrum, A., & Yusuf, C. (2022). Corporate governance and leverage on firm value : Evidence of Indonesian large firms. *Jurnal Keuangan Dan Perbankan*, 26(4), 862–873. <https://doi.org/10.26905/jkdp.v26i4.7764>
- Santoso, B. A., & Junaeni, I. (2022). Pengaruh Profitabilitas, Leverage, Ukuran Perusahaan, Likuiditas, dan Pertumbuhan Perusahaan Terhadap Nilai Perusahaan. *Owner*, 6(2), 1597–1609. <https://doi.org/10.33395/owner.v6i2.795>
- Setiawanta, Y. and Hakim, M. A. (2019). Apakah sinyal kinerja keuangan masih terkonfirmasi?: studi empiris lembaga keuangan di BEI. *Jurnal Ekonomi Dan Bisnis*, 22(2), 289–312. <https://doi.org/10.24914/jeb.v22i2.2048>
- Sihombing, P., Husni, R. A., & Zakchona, E. (2023). Financial ratios and institutional ownership impact on healthcare firm's value: A moderation role of leverage. *Jurnal Ekonomi Dan Bisnis*, 26(Oktober), 431–446. www.ejournal.uksw.edu/jeb
- Sihombing, P., Hutajalu, C. B. B., & Suparyati, A. (2023). Financial Performance and Capital Structure on Firm Value with Commodity Prices as a Moderating Variable. *Research of Business and Management*, 1(2), 57–66. <https://doi.org/10.58777/rbm.v1i2.80>
- Sihombing, P., Pranata, N., & Kwee, Y. (2024). Effect of Dividend, Profitability, and Interest Rates on Firm Value with Leverage as Moderating. *Research of Finance and Banking*, 2(1), 14–24. <https://doi.org/10.58777/rfb.v2i1.218>
- Solimun (2011). Analisis Variabel Moderasi dan Mediasi. Program Studi Statistika Universitas Brawijaya.
- Sri Tjahjono, Mazda Eko. "Pengaruh Kinerja Lingkungan terhadap Nilai Perusahaan dan Kinerja Keuangan." *Jurnal Ekonomi Universitas Esa Unggul*, vol. 4, no. 1, 2013. <https://doi.org/10.47007/jeko.v4i1.1025>
- STIE YAI, S. L. (2022). Faktor-faktor yang Mempengaruhi Nilai Perusahaan Pada Perusahaan Pertambangan yang Terdaftar Di Bursa Efek Indonesia Pada Tahun 2017-2020. *Jurnal Riset Akuntansi Dan Auditing*, 9(2), 57–69. <https://doi.org/10.55963/jraa.v9i2.468>
- Suhandi, N. P. M. (2021). The Effect of Institutional Ownership, Capital Structure and Firm Growth on Firm Value: Evidence from Indonesia. *International Journal of Digital Entrepreneurship and Business (IDEB)*, 2(2), 97 – 109.
- Susanto, D. A., & Admi, R. (2021). The Determinants of Indonesia's Coal Exports Demand to Six Asian Countries. *Journal of Developing Economies*, 6(1), 66–78. <https://doi.org/10.20473/jde.v6i1.18916>
- The Effect of Corporate Governance and Firm Characteristics on Firm Value: Evidence from Jordan. (2023). *Jordan Journal of Applied Science-Humanities Series*, 36(2). <https://doi.org/10.35192/jjoas-h.v36i2.522>
- UI Abideen, Z. (2023). Journal of Accounting and Finance in Emerging Economies Firm Performance in China: An Analysis of the Interplay between Financial Leverage, Firm Liquidity, and Firm Size. *Journal of Accounting and Finance in Emerging Economies*, 9(3). www.publishing.globalcsrc.org/jafee
- Widianingrum, H., Dillak, V.J. (2023). Pengaruh Kepemilikan Institusional, Kebijakan Hutang, Pertumbuhan Perusahaan dan Cash Holding Terhadap Nilai Perusahaan pada Perusahaan Makanan dan Minuman Terdaftar di BEI Tahun 2017-2021. *EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi Dan Bisnis*, 11(1). <https://doi.org/10.37676/ekombis.v11i1>
- Yahaya, O. A., & Musa, Z. (2023). Corporate Governance and Firm Value. *Article in Budapest International Research and Critics Institute (BIRCI-Journal) Humanities and Social Sciences*. <https://doi.org/10.33258/birci.v5i3.605x>