The Contrarian: Finance, Accounting, and Business Research
Volume 5, Issue 2, 2026
pp. 498-507

Does the market reward mandatory sustainability disclosure? Information asymmetry and firm value in Indonesian energy firms

Firmaniati Adeline Padosa
Corresponding author:
firmaniatipadosa@gmail.com
Sam Ratulangi University
Indonesia

Treesje Runtu
Sam Ratulangi University
Indonesia

Sintje Rondonuwu
Sam Ratulangi University
Indonesia

Received 22 October 2026
Revised 20 November 2026
Accepted 24 November 2026
Published online 25 November 2026

DOI: 10.58784/cfabr.536

ABSTRACT

Indonesian listed companies must publish sustainability reports, yet it is unclear whether investors price this mandatory disclosure and whether lower information asymmetry is the channel. This study examines how environmental and governance disclosure relates to information asymmetry and firm value among energy companies listed on the Indonesia Stock Exchange during 2021–2025, and whether information asymmetry mediates this relationship. A 44-item disclosure index based on the Global Reporting Initiative was coded for 51 firms (255 firm-years). Information asymmetry is measured by the quoted bid–ask spread and firm value by the logarithm of Tobin's Q, using panel models with firm-clustered and wild-bootstrap inference. Wider spreads are associated with lower firm value, although only moderately robustly, whereas the annual high–low price range behaves like a volatility measure and shows the opposite sign. Aggregate disclosure is not significantly related to the spread or to firm value, and no mediation is found. Within-firm increases in environmental, but not governance, disclosure are associated with higher value, but not when lagged. Evidence that the market rewards mandatory disclosure is weak, whereas liquidity-related information costs are priced more consistently. Regulators and investors should weigh disclosure quality and assurance, not only the volume of reported items.

Keywords: sustainability disclosure; information asymmetry; bid–ask spread; firm value; Tobin's Q; energy sector; Indonesia
JEL Classification: G14; G32

©2026 Firmaniati Adeline Padosa, Treesje Runtu, Sintje Rondonuwu

This work is licensed under a Creative Commons Attribution 4.0 International License.

1. Introduction

Sustainability reporting communicates a firm's environmental, social and governance performance to outside stakeholders (Global Reporting Initiative [GRI], 2021a). In Indonesia, Financial Services Authority Regulation No. 51/POJK.03/2017 requires issuers and

public companies to publish sustainability reports (Otoritas Jasa Keuangan [OJK], 2017), and the 2021–2025 sustainable-finance roadmap extends this agenda (OJK, 2021). Mandatory reporting, however, does not guarantee that investors price what is reported (Gillan et al., 2021). If disclosure is mostly compliance, it should carry little information; if it is informative, it should narrow the information gap between managers and investors and, through that channel, raise value (Diantimala et al., 2022; Healy & Palepu, 2001).

Energy companies are a demanding test: their valuations are dominated by the commodity cycle, which spans a 2021–2022 boom and its normalisation in the sample window, while average disclosure rose from 0.651 of 44 items in 2021 to 0.772 in 2025.

Existing Indonesian evidence is mixed: sustainability or ESG disclosure is reported to raise, lower or leave unchanged firm value (Angir & Weli, 2024; Kusharyanti & Simamora, 2024; Sananta & Yudhanti, 2025; Winowattan & Oktrivina, 2026), and information asymmetry is reported to lower value (Cheryta et al., 2018) or to have no significant effect (Angir & Weli, 2024; Putri & Diantini, 2022). Two features limit inference: studies place disclosure and asymmetry side by side as regressors although disclosure should act on value partly through asymmetry, and asymmetry is often proxied by measures that mix liquidity, volatility and price movements. The closest study, Diantimala et al. (2022), models the disclosure–asymmetry–value chain for non-financial IDX firms in 2012–2019 but neither separates environmental from governance disclosure nor focuses on the energy sector.

We make three contributions. First, we test the disclosure–asymmetry–value mechanism explicitly rather than treating the two as parallel regressors. Second, we build a documented 44-item index separating environmental (31 items) from governance (13 items) disclosure, so that opposite-signed effects are not averaged away. Third, we show that a widely used annual high–low "spread" behaves like a volatility measure and reverses the sign of the asymmetry–value relation relative to a quoted bid–ask spread.

2. Literature review

Theoretical background

Signaling theory holds that better-informed insiders convey private information through costly actions that low-quality firms cannot cheaply imitate (Connelly et al., 2011; Spence, 1973). Voluntary-disclosure and cost-of-capital theory adds that credible disclosure reduces information asymmetry, improves liquidity and lowers the required return (Diamond & Verrecchia, 1991; Healy & Palepu, 2001; Verrecchia, 1983). Empirically, sustainability disclosure is associated with lower cost of equity, easier access to finance and lower information asymmetry (Cheng et al., 2014; Cho et al., 2013; Dhaliwal et al., 2011), and with higher firm value when disclosure quality is high (Plumlee et al., 2015).

These arguments fit voluntary, costly disclosure. Reporting in Indonesia is mandatory and cross-sectional dispersion is limited (standard deviation 0.108), so compliance-level reporting is a weak signal; legitimacy arguments add that firms in environmentally exposed sectors may disclose to maintain legitimacy rather than to signal quality, and such symbolic disclosure should carry little price-relevant information. Prior studies of energy and coal firms point to financial fundamentals rather than disclosure as the main driver (Napitupulu & Hapsari, 2025; Winowattan & Oktrivina, 2026), and studies that separate dimensions find opposite signs for environmental and governance disclosure (Masfiah & Sulistyowati, 2025), which argues against relying on a composite

index only. The empirical question is which force dominates.

Hypotheses

Disclosure and firm value. Disclosure can raise value by lowering the cost of capital and revealing risk-management quality (Dhaliwal et al., 2011; Jadoon et al., 2021), but the argument is weaker when reporting is mandatory and unassured. We hypothesise a positive association and test it two-tailed, because a negative association is plausible if disclosure signals transition-risk exposure:

H_1: Sustainability disclosure (SRDI) is positively associated with firm value.

H_{1a}/H_{1b}: The same holds separately for environmental and governance disclosure (exploratory).

Disclosure and information asymmetry. If disclosure is informative, it narrows the information gap and the compensation market makers require for adverse selection (Cho et al., 2013; Diamond & Verrecchia, 1991):

H_2: Sustainability disclosure is negatively associated with information asymmetry.

Information asymmetry and value. Asymmetry creates adverse selection and perceived risk, raising the required return and depressing prices (Healy & Palepu, 2001; Yusuf et al., 2024):

H_3: Information asymmetry is negatively associated with firm value.

Mechanism. Combining H2 and H3, disclosure should affect value indirectly through lower asymmetry (Diantimala et al., 2022):

H_4: Information asymmetry mediates the relationship between disclosure and firm value (a positive indirect effect).

Figure 1 shows the framework.

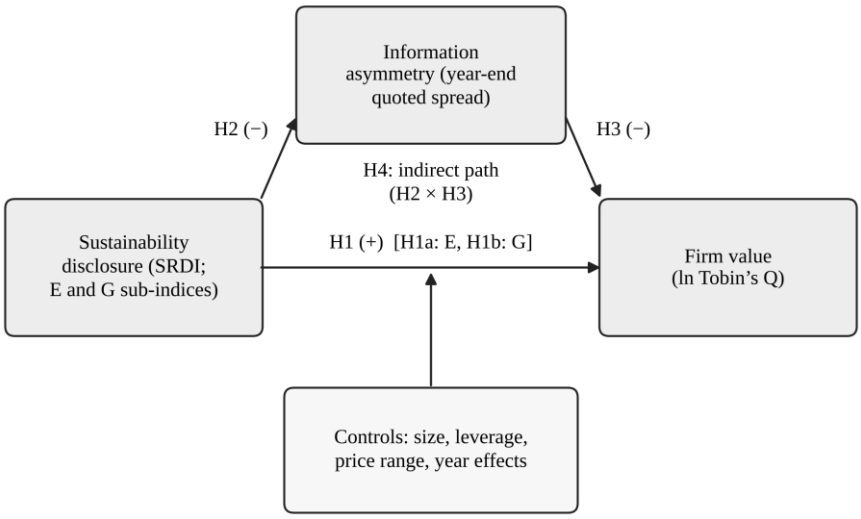


Figure 1. Research framework and hypothesised signs

3. Research method

Population, sample and data

The population is the 66 energy-sector companies listed on the IDX throughout 2021–2025. Fifteen firms that did not consistently publish annual or sustainability reports in all five years were excluded, leaving 51 firms and 255 firm-years. The filter is a data-availability rule, so estimates describe consistent reporters, and the absence of non-disclosers narrows variation in disclosure (minimum SRDI 0.386).

Data come from annual reports, financial statements, sustainability reports and IDX market data (www.idx.co.id), with US-dollar balance-sheet items converted to rupiah at year-end exchange rates. Disclosure, price, quote and Tobin's Q variables cover all 255 firm-years, but size and leverage are available for only 204 firm-years of 42 firms, so models with controls use this unbalanced panel (195 firm-years where the quoted spread is also available).

Variables

Sustainability disclosure (SRDI). We code a binary checklist of 44 items (the coding sheet is available on request): 31 environmental items from GRI topic standards 301–308 (GRI, 2016–2020) and 13 governance items from GRI 2: General Disclosures, disclosures 2-9 to 2-21 (GRI, 2021a). Each reported item scores 1; SRDI = $\Sigma X_i/44$, with sub-indices E = environmental items/31 and G = governance items/13. The equally weighted index measures breadth, not credibility. GRI sector standards for oil and gas (GRI 11; GRI, 2021b) and coal (GRI 12; GRI, 2022) are not used.

Information asymmetry (IA). Our primary measure is the year-end quoted relative spread, (best offer − best bid)/midpoint, on the last trading day with quotes, in percent. It is a genuine quoted spread but a single-day snapshot, less precise than a full-year average. Firm-years with no quotes (14) are missing. We also keep the annual high–low price range, PR = (highest − lowest price)/midpoint, which is sometimes used as a spread proxy; we treat it as a volatility-type variable.

Firm value. ln Q, where Q = (market value of equity + total debt)/total assets, following Chung and Pruitt (1994); market value of equity is year-end price times shares outstanding and debt is current plus long-term liabilities. Q is highly right-skewed (skewness 4.12 over 255 firm-years), which motivates the log transformation.

Controls. Size = ln total assets (rupiah million); leverage = total debt/total assets; PR; and year indicators, which absorb common commodity-cycle shocks. Return on assets, sales growth and commodity prices were not compiled.

Empirical models

For firm i in year t, the firm-value model is

$$ln\ Q_{it} = \alpha + \beta_1\ SRDI_{it} + \beta_2\ IA_{it} + \beta_3\ PR_{it} + \beta_4\ Size_{it} + \beta_5\ Lev_{it} + \lambda_t + u_i + \varepsilon_{it} \quad (1)$$

where λ_t are year effects and u_i is a firm effect (random in the random-effects model, absorbed in the fixed-effects model). H1a/H1b replace SRDI with E and G. H2 is tested with

$$ln\ IA_{it} = \delta + \gamma\ SRDI_{it} + \lambda_t + u_i + \nu_{it} \quad (2)$$

and H4 by the product of γ and β_2 (the indirect effect) with a firm-level bootstrap confidence interval (Preacher & Hayes, 2008). Because IA enters Equation (1) in percent and Equation (2) in logs, the indirect effect is a descriptive decomposition, not an exact elasticity chain.

We report pooled OLS, random-effects and fixed-effects estimates with firm-clustered standard errors, two-tailed p-values from t(G−1) critical values, and wild-cluster restricted bootstrap p-values (1,999 Rademacher draws) for key fixed-effects coefficients because clusters are few (Cameron et al., 2008; Cameron & Miller, 2015; Petersen, 2009). A cluster-robust Mundlak test (Mundlak, 1978) guides the choice between random and fixed effects, and we report the Wooldridge (2010) serial-correlation test, variance inflation factors and a specification with disclosure lagged one year, because reports are released after year-end.

4. Result and discussion

Descriptive statistics

Table 1. Descriptive statistics

Variable	N	Mean	SD	Min	Median	Max
SRDI (44 items)	255	0.721	0.108	0.386	0.727	0.977
E (31 items)	255	0.693	0.136	0.323	0.677	0.968
G (13 items)	255	0.786	0.134	0.385	0.769	1.000
IA: quoted spread (%)	241	1.416	2.288	0.091	0.643	18.182
PR: price range	255	0.766	0.422	0.000	0.696	1.755
Tobin's Q	204	1.304	1.344	0.231	0.843	9.362
ln Q	204	−0.019	0.689	−1.466	−0.170	2.237
Size (ln total assets)	204	15.65	1.72	11.84	15.56	18.94
Leverage	204	0.252	0.186	0.000	0.221	0.882

Note: SRDI, E, G and PR cover all 255 firm-years; IA covers 241 (14 firm-years with no quotes are missing); Q, ln Q, size and leverage rows cover the 204 firm-years (42 firms) with controls; over all 255 firm-years, mean Q is 1.620 and mean ln Q 0.060.

Table 1 summarises the distributions. The average firm discloses 72% of items (69% environmental; 79% governance), and mean SRDI rose from 0.651 in 2021 to 0.772 in 2025, mainly through environmental items. The quoted spread is small for most observations (median 0.64%) but has a long right tail (maximum 18.2%).

Is the price range an information-asymmetry measure?

The alternative proxy, PR, is the annual range relative to its midpoint. Its mean of 0.766 implies that the average annual high is about 2.2 times the low, and its correlation with the quoted spread is only 0.24 (Spearman 0.17; N = 241), so PR is better read as price volatility and run-up, which also move year-end market value and thus Tobin's Q mechanically.

Firm value, disclosure and the quoted spread

Table 2. Determinants of firm value; dependent variable ln Q

	(1) FEM	(2) REM	(3) FEM	(4) FEM, E and G
SRDI	0.325	0.594	0.865**	
	(0.514)	(0.484)	(0.373)	
Environmental (E)				0.867***
				(0.315)
Governance (G)				−0.105
				(0.244)
Quoted spread (IA, %)	−0.048***	−0.035**	−0.041**	−0.042**
	(0.015)	(0.017)	(0.017)	(0.019)
Price range (PR)		0.384**	0.426***	0.412***
		(0.151)	(0.154)	(0.150)
Size		−0.079	−0.182	−0.166
		(0.050)	(0.251)	(0.247)
Leverage		−0.023	0.034	0.003
		(0.408)	(0.548)	(0.529)
Year effects	No	Yes	Yes	Yes
Firm-years / firms	195 / 42	195 / 42	195 / 42	195 / 42
R^2 within	0.044	0.224	0.229	0.239
Joint test p-value (all slopes)	0.010	0.012	0.004	0.007

*Note: Standard errors in parentheses, clustered by firm; *, **, *** = p < 0.10, 0.05, 0.01 (two-tailed, t(G−1)). Column (1) includes only SRDI and IA. Wild-cluster bootstrap p-values for column (3): SRDI 0.033, IA 0.087, PR 0.020. Mundlak test: $\chi^2(5) = 12.63$, p = 0.027 (full specification), p = 0.603 (baseline). Wooldridge p = 0.768; largest VIF 1.28.*

Table 2 reports three results. First, the quoted spread is negatively priced: the IA coefficient is negative in every full-period specification, −0.048 (p = 0.003) with SRDI only and −0.041 (SE 0.017; p = 0.022) in the full fixed-effects model, about −0.098 log points per standard deviation of the spread. Random-effects estimates are similar (−0.035; p = 0.044), but the wild-cluster bootstrap p-value is 0.087, so the result is moderately robust rather than strong. This sign agrees with H3, in contrast with the positive coefficient on the price range.

Second, the price range is positively related to firm value (0.426; p = 0.008; bootstrap p = 0.020). Given its weak correlation with the quoted spread, this is consistent with the range capturing volatility and run-up rather than information asymmetry.

Third, the disclosure result depends on the specification. Under random effects the SRDI coefficient is insignificant (0.595; p = 0.226); under fixed effects with year effects, which the Mundlak test supports, it is 0.865 (SE 0.373; p = 0.026; bootstrap p = 0.033). Column (4) shows that this reflects environmental disclosure (0.867; p = 0.009), while governance disclosure is close to zero (−0.105; p = 0.670). H1a is thus supported and H1b is not, but because the E/G split was not planned beforehand, this is exploratory.

Disclosure, information asymmetry and mediation

Table 3. Disclosure, information asymmetry and robustness of the firm-value estimates

Specification	N	SRDI coefficient	p-value	Spread coefficient	p-value
Panel A. Disclosure and information asymmetry (dependent variable: ln quoted spread; standard errors in parentheses)					
FEM, SRDI, year effects	241	−0.948 (0.941)	0.319	—	—
REM, SRDI, year effects	241	−0.335 (0.849)	0.695	—	—
Pooled OLS, SRDI, year effects	241	0.124 (0.945)	0.896	—	—
FEM, environmental (E)	241	−1.251 (0.768)	0.110	—	—
FEM, governance (G)	241	0.436 (0.379)	0.256	—	—
FEM, SRDI + size, leverage	195	−0.768 (0.968)	0.432	—	—
FEM, SRDI lagged one year	194	1.077 (1.033)	0.302	—	—
Panel B. Robustness of the firm-value estimates (dependent variable: ln Q; fixed effects with year effects)					
Baseline (Table 2, column 3)	195 / 42	0.865**	0.026	−0.041**	0.022
Winsorised at 1st/99th percentile	195 / 42	0.754*	0.068	−0.044**	0.041
Excluding TCPI and BYAN	185 / 40	0.612*	0.097	−0.046**	0.012
SRDI lagged one year	157 / 42	−0.330	0.664	−0.030	0.139
Sub-period 2021–2022	76 / 38	0.314	0.600	0.061	0.212
Sub-period 2023–2025	119 / 42	1.446*	0.053	−0.054***	<0.001
Without IA (total association)	204 / 42	0.676	0.108	—	—

*Note: Standard errors clustered by firm; *, **, *** denote p < 0.10, 0.05, 0.01. Panel A: the first three rows use all firm-years with a quoted spread (N = 241; 50 firms), and the coefficient is on SRDI unless E or G is stated. Panel B: controls (PR, size, leverage) and year effects are included, the lagged specification drops each firm's first year, and the baseline is Table 2, column 3.*

As Panel A of Table 3 shows, H2 is not supported: the disclosure coefficient is statistically indistinguishable from zero in fixed and random effects (−0.948, p = 0.319; −0.335, p = 0.695) and in the lagged and controlled variants. The mediation estimate agrees: the indirect effect is 0.032 with a 95% bootstrap interval of −0.176 to 0.263 (N = 195), which includes zero, and it is far smaller than the direct association of SRDI with value (0.80).

Robustness

Panel B of Table 3 shows that the negative quoted-spread coefficient survives winsorising ($p = 0.041$) and exclusion of the two highest-Q firms, TCPI (Transcoal Pacific) and BYAN (Bayan Resources) ($p = 0.012$), but it is concentrated in 2023–2025 (-0.054; $p = 0.001$) and is positive and insignificant in 2021–2022 (0.061; $p = 0.212$; 76 observations), so it is not stable across the commodity cycle. The positive SRDI coefficient weakens when winsorised ($p = 0.068$) or when these two firms are dropped ($p = 0.097$), and disappears when disclosure is lagged (-0.330; $p = 0.664$), so reverse causality or common shocks are at least as plausible as a price reaction to disclosure. In the full 255-firm-year panel without controls, random effects give SRDI 0.079 ($p = 0.861$) and PR 0.296 ($p = 0.067$; 0.325, $p = 0.046$ without TCPI and BYAN), consistent with these results.

Discussion

The most robust finding concerns measurement. A high–low range labelled as a spread behaves as volatility: it is weakly related to the quoted spread and positively related to value. Inconclusive asymmetry–value results in Indonesian studies (Angir & Weli, 2024; Putri & Diantini, 2022) may partly reflect proxy choice. With a quoted spread, the sign is negative and consistent with adverse-selection and liquidity theory (Diamond & Verrecchia, 1991; Healy & Palepu, 2001).

For disclosure, the evidence does not support a general claim that the market rewards sustainability reporting. A positive within-firm association appears only in fixed-effects models with year effects, comes from environmental items, and vanishes when disclosure is lagged. Three features plausibly explain why disclosure carries little information: reporting is mandatory and the index measures breadth, so dispersion across firms is small; the index is unweighted and unassured, so it cannot separate substantive from symbolic reporting (legitimacy theory); and energy valuations are dominated by commodity prices.

The absence of a disclosure–spread link (H2) and of mediation (H4) contrasts with Diantimala et al. (2022), who find an indirect effect for voluntary disclosure by non-financial firms over 2012–2019; differences in sample, in voluntary versus mandatory disclosure and in the asymmetry proxy may contribute, and our test has limited power with 42–50 clusters. The positive environmental and null governance results echo the dimension-specific signs of Masfiah and Sulistyowati (2025).

5. Conclusion

For 51 Indonesian energy companies over 2021–2025, a year-end quoted bid–ask spread is negatively associated with firm value, although only moderately robustly, whereas an annual high–low price range, often used as a spread proxy, behaves like a volatility measure with the opposite sign. Aggregate mandatory sustainability disclosure is not robustly related to firm value or to the quoted spread, and information asymmetry does not mediate the disclosure–value relationship; a positive within-firm association appears only for environmental disclosure and disappears when disclosure is lagged. The disclosure estimates are imprecise, so the data are uninformative rather than evidence of no effect. For investors, wide spreads are a more consistent valuation signal than the count of reported items; for regulators such as the OJK and the IDX, assurance and quality requirements promise more than adding mandated items; and researchers should not label a high–low range a bid–ask spread.

The study has limitations: the quoted spread is a single-day snapshot, the firm-value models cover 42 firms and 204 firm-years with only size and leverage as

controls, the sample comprises consistent reporters in one sector and country, and the index lacks an inter-coder reliability check. Future research should use daily quoted spreads or low-frequency estimators (Abdi & Ranaldo, 2017; Corwin & Schultz, 2012), add controls such as profitability, growth and ownership, test a quality-weighted index with assurance indicators, and use event studies around report release dates.

References

Abdi, F., & Ranaldo, A. (2017). A simple estimation of bid-ask spreads from daily close, high, and low prices. *Review of Financial Studies, 30*(12), 4437–4480. https://doi.org/10.1093/rfs/hhx084

Angir, P., & Weli, W. (2024). The influence of environmental, social, and governance (ESG) disclosure on firm value: An asymmetric information perspective in Indonesian listed companies. *Binus Business Review, 15*(1), 29–40. https://doi.org/10.21512/bbr.v15i1.10460

Cameron, A. C., & Miller, D. L. (2015). A practitioner's guide to cluster-robust inference. *Journal of Human Resources, 50*(2), 317–372. https://doi.org/10.3368/jhr.50.2.317

Cameron, A. C., Gelbach, J. B., & Miller, D. L. (2008). Bootstrap-based improvements for inference with clustered errors. *Review of Economics and Statistics, 90*(3), 414–427. https://doi.org/10.1162/rest.90.3.414

Cheng, B., Ioannou, I., & Serafeim, G. (2014). Corporate social responsibility and access to finance. *Strategic Management Journal, 35*(1), 1–23. https://doi.org/10.1002/smj.2131

Cheryta, A. M., Moeljadi, M., & Indrawati, N. K. (2018). Leverage, asymmetric information, firm value, and cash holdings in Indonesia. *Jurnal Keuangan dan Perbankan, 22*(1), 83–93. https://doi.org/10.26905/jkdp.v22i1.1334

Cho, S. Y., Lee, C., & Pfeiffer, R. J. (2013). Corporate social responsibility performance and information asymmetry. *Journal of Accounting and Public Policy, 32*(1), 71–83. https://doi.org/10.1016/j.jaccpubpol.2012.10.005

Chung, K. H., & Pruitt, S. W. (1994). A simple approximation of Tobin's q. *Financial Management, 23*(3), 70–74. https://doi.org/10.2307/3665967

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling theory: A review and assessment. *Journal of Management, 37*(1), 39–67. https://doi.org/10.1177/0149206310388419

Corwin, S. A., & Schultz, P. (2012). A simple way to estimate bid-ask spreads from daily high and low prices. *Journal of Finance, 67*(2), 719–760. https://doi.org/10.1111/j.1540-6261.2012.01729.x

Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary nonfinancial disclosure and the cost of equity capital: The initiation of corporate social responsibility reporting. *The Accounting Review, 86*(1), 59–100. https://doi.org/10.2308/accr.00000005

Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, liquidity, and the cost of capital. *Journal of Finance, 46*(4), 1325–1359. https://doi.org/10.1111/j.1540-6261.1991.tb04620.x

Diantimala, Y., Syahnur, S., & Islahuddin, I. (2022). Recursive correlation between voluntary disclosure, cost of capital, information asymmetry, and firm value. *Cogent Business & Management, 9*(1), Article 2154489. https://doi.org/10.1080/23311975.2022.2154489

Gillan, S. L., Koch, A., & Starks, L. T. (2021). Firms and social responsibility: A review of ESG and CSR research in corporate finance. *Journal of Corporate Finance, 66*, 101889. https://doi.org/10.1016/j.jcorpfin.2021.101889

Global Reporting Initiative. (2016–2020). *GRI 301–308 topic standards (Materials; Energy; Water and Effluents; Biodiversity; Emissions; Waste; Supplier Environmental Assessment)*. GRI.

Global Reporting Initiative. (2021a). *GRI 2: General Disclosures 2021*. GRI.

Global Reporting Initiative. (2021b). *GRI 11: Oil and Gas Sector 2021*. GRI.

Global Reporting Initiative. (2022). *GRI 12: Coal Sector 2022*. GRI.

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics, 31*(1–3), 405–440. https://doi.org/10.1016/S0165-4101(01)00018-0

Jadoon, I. A., Ali, A., Ayub, U., Tahir, M., & Mumtaz, R. (2021). The impact of sustainability reporting quality on the value relevance of corporate sustainability performance. *Sustainable Development, 29*(1), 155–175. https://doi.org/10.1002/sd.2138

Kusharyanti, K., & Simamora, P. M. (2024). The effect of sustainability report disclosure on firm value. *Jurnal EQUITY, 26*(2), 193–205. https://doi.org/10.34209/equ.v26i2.6392

Masfiah, D., & Sulistyowati, E. (2025). Pengaruh pengungkapan environmental, social, governance, dan profitabilitas terhadap nilai perusahaan di BEI. *Jurnal Ilmu dan Riset Akuntansi, 14*(5). https://jurnalmahasiswa.stiesia.ac.id/index.php/jira/article/view/6280

Mundlak, Y. (1978). On the pooling of time series and cross section data. *Econometrica, 46*(1), 69–85. https://doi.org/10.2307/1913646

Napitupulu, T., & Hapsari, D. W. (2025). Pengaruh asimetri informasi, firm size dan financial distress terhadap nilai perusahaan (Studi kasus perusahaan sektor energi terdaftar di Bursa Efek Indonesia periode 2021–2023). *e-Proceeding of Management, 12*(3), 1039–1049. https://openlibrarypublications.telkomuniversity.ac.id/index.php/management/article/view/26824

Otoritas Jasa Keuangan. (2017). *Peraturan OJK Nomor 51/POJK.03/2017 tentang penerapan keuangan berkelanjutan bagi lembaga jasa keuangan, emiten, dan perusahaan publik*.

Otoritas Jasa Keuangan. (2021). *Roadmap keuangan berkelanjutan di Indonesia fase II (2021–2025)*.

Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies, 22*(1), 435–480. https://doi.org/10.1093/rfs/hhn053

Plumlee, M., Brown, D., Hayes, R. M., & Marshall, R. S. (2015). Voluntary environmental disclosure quality and firm value: Further evidence. *Journal of Accounting and Public Policy, 34*(4), 336–361. https://doi.org/10.1016/j.jaccpubpol.2015.04.004

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Putri, C. N. A., & Diantini, N. N. A. (2022). Pengaruh asimetri informasi, pertumbuhan perusahaan, dan leverage terhadap nilai perusahaan. *E-Jurnal Manajemen Universitas Udayana, 11*(11), 1937–1955. https://doi.org/10.24843/EJMUNUD.2022.v11.i11.p05

Sananta, K., & Yudhanti, C. B. H. (2025). Pengaruh perencanaan pajak, laporan keberlanjutan, dan asimetri informasi terhadap nilai perusahaan. *Reviu Akuntansi dan Bisnis Indonesia, 9*(2), 267–283. https://doi.org/10.18196/rabin.v9i2.25532

Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics, 87*(3), 355–374. https://doi.org/10.2307/1882010

Verrecchia, R. E. (1983). Discretionary disclosure. *Journal of Accounting and Economics, 5*, 179–194. https://doi.org/10.1016/0165-4101(83)90011-3

Winowattan, M. F., & Oktrivina, A. (2026). Pengaruh pengungkapan ESG dalam laporan keberlanjutan terhadap nilai perusahaan pada perusahaan subsektor batubara di Bursa Efek Indonesia. *Jurnal Manajemen Strategi dan Aplikasi Bisnis, 9*(1), 1–12. https://doi.org/10.36407/jmsab.v9i1.1809

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (2nd ed.). MIT Press.

Yusuf, J., Olajide, A. L., & Olakunle, O. I. (2024). The role of asymmetric information in shaping investment strategies: Implications for financial market stability. *Al-Ghary Journal of Economic and Management Sciences, 20*(4), 646–666. https://doi.org/10.36325/ghjec.v20i4.17548