Accounting Research Festival2025

P-ISSN: XXXX-XXXX, E-ISSN: XXXX-XXXX
Website:https://publikasiilmiah.unwahas.ac.id/fra4
Redefining Accounting Education: Balancing Technological Innovation with Ethics and Sustainability

The Impact of Digital Transformation and ESG Disclosure on Finance

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ABSTRACT
This study aims to analyze the influence of digital transformation and Environmental, Social, and Governance (ESG) disclosure on the financial performance of energy companies in Indonesia. The background of this research stems from the inconsistency of previous studies and the increasing demand for digitalization and sustainability in the energy sector during the energy transition. This study uses secondary data obtained from the annual reports and sustainability reports of energy companies listed on the Indonesia Stock Exchange (IDX) for the 2021–2024 period, with a total of 157 observations. Digital transformation is measured using the Digital Transformation Index (DTI), ESG disclosure is measured using the GRI Standards 2021, and financial performance is proxied by Price to Book Value (PVB). Data analysis uses panel data regression with a Fixed Effect Model (FEM) approach based on the results of the Chow and Hausman test. The results show that digital transformation has a significant but negative effect on company financial performance, while ESG disclosure has a positive and significant effect. Simultaneously, both variables have a significant influence with an R-squared value of 0.850, indicating that the model is able to explain variations in financial performance strongly. These findings underscore the importance of synergy between digital investment and sustainability practices as a strategy to strengthen the value of energy companies in Indonesia..
Keywords:*Digital Transformation; ESG Disclosure; Financial Performance; Energy Companies*

INTRODUCTION
The energy sector plays a strategic role in supporting national economic growth and supporting the achievement of the Sustainable Development Goals (SDGs), particularly SDG 7 (Affordable and Clean Energy), SDG 9 (Innovation and Infrastructure), and SDG 13 (Addressing Climate Change). However, in recent years, the financial performance of energy companies in Indonesia has shown a fluctuating trend due to production cost pressures, commodity price volatility, and the demands of the transition to green energy.(Zhan, 2024)Financial performance itself reflects a company's ability to generate profits and increase shareholder value, which can be measured through indicators such as Return on Assets (ROA).(Shalhoob, 2025).

Current trends indicate that the declining performance of most energy companies is related to suboptimal operational efficiency. PT Pertamina (Persero) recorded a 29% decline in net profit in 2023 due to rising refinery costs and the suboptimal digitalization of its production process.(CNBC, 2025)PT Adaro Energy Tbk experienced a similar situation, experiencing a 21% decline in profits due to high operational costs and delays in digital integration.(Thohir, 2024)This situation indicates that digital transformation and the implementation of sustainability principles (ESG) have the potential to play a significant role in strengthening the efficiency and performance of energy companies.

Based on the Resource-Based View (RBV) put forward by(Barney, 1991)Companies can gain sustainable competitive advantage by leveraging valuable, rare, difficult-to-imitate, and non-substitutable resources. Digital transformation falls into this category of strategic resources because it can increase efficiency, reduce operational errors, accelerate decision-making, and strengthen financial reporting. With digitalization, companies can reduce production costs, improve productivity, and increase market value.(Zhou et al., 2023)However, the results of previous studies still show inconsistencies.(Liu, 2024)as well as(Valaskova et al., 2025)found that digitalization has a positive effect on financial performance and cost efficiency, while(Han, 2024)reported that the effects of digitalization were not significant due to the large initial investment costs.

In addition to internal capabilities, Environmental, Social, and Governance (ESG) disclosure is also a crucial external factor that can impact a company's financial performance. Based on Stakeholder Theory(Freeman, 1984)Corporate sustainability depends not only on internal efficiency but also on social legitimacy and stakeholder trust. ESG disclosure reflects a company's responsibility towards the environment, social welfare, and transparent governance. Good ESG disclosure can attract sustainability-minded investors, strengthen a company's reputation, and reduce reputational risk, which indirectly improves market value.(Li et al., 2025).

However, the results of previous research are still varied.(Chen, 2025)shows that ESG disclosure improves financial performance due to high investor confidence, whereas(Shalhoob, 2025)found that ESG disclosure has not had a significant impact because it remains a formality in developing countries. This situation indicates a research gap, particularly in the context of Indonesian energy companies adapting to global pressures of decarbonization and digitalization.

The implementation of digitalization and ESG is in line with national policies towards the Sustainable Energy Transition and Indonesia's commitment to the SDGs.(Kwilinski, 2023)Therefore, this research has scientific urgency to empirically examine how digital transformation and ESG disclosure impact the financial performance of energy companies in Indonesia, both in terms of internal efficiency and external legitimacy. This approach is expected to provide academic and policy contributions in strengthening the sustainability strategy of the national energy sector.

Hypothesis

The Impact of Digitalization on Financial Performance

Based on the Resource-Based View, digital capabilities are strategic resources. Research results(Valaskova et al., 2025)And(Liu, 2024)shows that digitalization improves efficiency and financial performance. Although the initial investment is high,(Han, 2024), digital transformation is generally believed to have a positive impact on the profitability of energy companies.

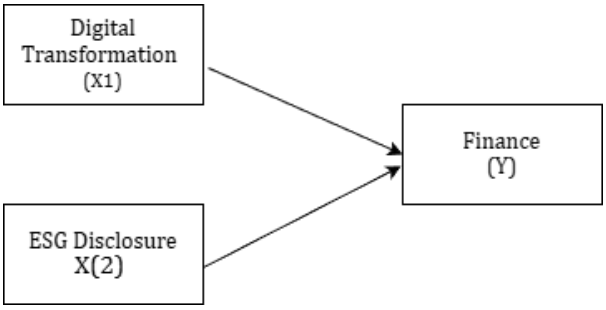
H1: Digital Transformation Has a Positive Impact on Financial Performance

The Impact of ESG on Financial Performance

According to Stakeholder Theory, ESG disclosure builds legitimacy and trust.(Chen, 2025)And(Li et al., 2025)ESG reporting has been shown to increase investor interest and company value. In developing countries, reporting can be symbolic.(Shalhoob, 2025), good ESG practices are expected to boost the financial performance of energy companies.

H2: ESG Disclosure Has a Positive Impact on Financial Performance

This research framework describes the causal relationship between two independent variables and the dependent variable. Digital transformation (X1) and ESG disclosure (X2) are estimated to strengthen financial performance (Y).



RESEARCH METHOD

To test the previously formulated hypotheses, this study uses a quantitative approach with the aim of empirically analyzing the influence of digital transformation (X1) and ESG disclosure (X2) on the financial performance (Y) of energy companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 period. The quantitative approach was chosen because it is able to measure the relationship between variables objectively and measurably based on numerical data. The data used are secondary data, obtained from annual reports, sustainability reports, and official publications of the Indonesia Stock Exchange (IDX).www.idx.co.id) and each company. The analysis was conducted using the FEM approach. Based on the criteria, there were 157 research samples. The data obtained are as follows:

Table 1 Sample Determination

Criteria	2021	2022	2023	2024
Publishing Annual Financial Report	74	74	74	74
Incomplete Data On Sustainability Report, and Digital Transformation	56	40	29	14
Samples That Meet the Criteria	18	34	45	60
Amount of Sample Data Used	157			

Digital transformation variables are measured using the Digital Transformation Index (DTI), which is based on seven key indicators: ERP/SAP system implementation, AI- or IoT-based technology, digital reporting, digital transformation strategy, digitalization unit formation, cybersecurity policies, and corporate digital innovation. Each indicator is scored 1 if implemented and 0 if not, and is calculated using the following formula:

$$DTI = Number\ of\ indicators\ fulfilled/7 \times 100\%$$

ESG disclosure variables are measured using a disclosure index based on the Global Reporting Initiative (GRI) standards, which encompass three main dimensions: environmental (E), social (S), and governance (G). Each disclosure element is scored 1 if disclosed and 0 if not disclosed, and then calculated as a percentage of total disclosure.

Meanwhile, the financial performance variable (Y) is measured using Book Value per Price (BVP). BVP represents a company's book value relative to its stock market price, thus indicating the extent to which the stock price reflects the company's fundamental value. The calculation formula for these three indicators is as follows:

$$PVB = Share\ Price\ /\ Book\ Value\ per\ Share$$

The data analysis method used in this study is panel data regression analysis processed using EViews 13 software. Before conducting the regression test, classical assumption tests were first conducted, including a normality test to ensure a normal residual distribution, a multicollinearity test to test the correlation between independent variables, a heteroscedasticity test to check the uniformity of residual variance, and an autocorrelation test to test the existence of residual correlation between periods. The regression model used in this study is formulated as follows:

$$FPit = \beta 0 + \beta 1 DTIit + \beta 2 ESGit + \varepsilon it$$

Information :

FP :Financial Performance (BVP)
DTI :Digital Transformation Index
ESG :ESG Disclosure Score
β_0 :Constant
β_1, β_2 :Regression coefficient
e :Error term

Significance testing was conducted through a t-test to determine the partial effect of each independent variable on the dependent variable, an F-test to test the simultaneous effect between independent variables on the dependent variable, and a coefficient of determination (R^2) to see how much variation in financial performance can be explained by digital transformation and ESG disclosure.

The interpretation of the research results is based on RBV and Stakeholder Theory. Based on RBV theory, the implementation of digital transformation can be considered a strategic asset for a company that can improve operational efficiency and competitive advantage, thus positively impacting financial performance.(Mailani et al., 2024)Meanwhile, according to Stakeholder Theory, ESG disclosure is a manifestation of corporate social responsibility and a form of communication to stakeholders, which ultimately can strengthen the legitimacy, reputation, and value of the company in a sustainable manner.(Wang, 2024).

Table 2 Operational Definition of Variables

Variables	Measurement	Source
Digital Transformation (X_1)	DTI Index based on 7 indicators (ERP, AI/IoT, digital reports, digitalization units, cybersecurity, innovation)	Valaskova et al. (2025)
ESG Disclosure (X_2)	The ESG index based on GRI Standards (2021) includes 60 items	GRI (2021)
Financial Performance (Y)	PVB	Annual report

RESULTS AND DISCUSSION

1. Descriptive Statistics

Table 3 Descriptive Statistics and Classical Assumption Tests

Variables	MIN	MAX	MEAN	Standard Deviation	Kolmogorov-Smirnov	Toll	VIF	Park test	Durbin Watson
DTI	0.0	1.00	0.55	0.25	015	0.990	1,011	0.19	1,958
ESG	0	100	45.0	12.00	0.22	0.990	1,011	0.43	
Y	100,000	5,000,000	155,580	1432945	0.20				

The data results above indicate that all variables in the study meet the statistical requirements for panel regression. The significance value of the normality test (Sig > 0.05) indicates that the residuals are normally distributed, while the VIF value < 10 indicates the absence of multicollinearity among the independent variables. The heteroscedasticity test also shows Sig > 0.05, indicating that the residual variance is homogeneous. Furthermore, the Durbin-Watson value of 1.958 indicates no autocorrelation. With all assumptions met, the panel regression model is considered valid for further analysis.

2. Model Selection and Assumption Testing

Before conducting the regression, a model selection test was conducted. The Chow and Hausman tests were both significant, so the best model used was the Fixed Effect Model (FEM). The selection of FEM indicates that differences in the characteristics of each energy company—such as asset size, cost structure, or digital maturity level—have an influence that must be accounted for in the model. The classical assumption test showed that the model was free from multicollinearity (VIF < 10), the data was normally distributed (Sig > 0.05), there was no heteroscedasticity (Sig > 0.05), and there were no signs of autocorrelation (DW = 1.958). Thus, the panel regression model can be interpreted accurately.

Table 4 T-TEST

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Y	885203.1	354081.2	2,500,000	0.0125
X1	-1080822.	360274.0	-3,000,000	0.0035
X2	5.557909	1.389477	4,000,000	0.0001

The data above shows that digital transformation (X1) has a negative and significant effect on financial performance (t = −3.000; Sig = 0.0035). A coefficient of −1,080.822 indicates that increasing digitalization in the short term can reduce company value. This can be explained by the high initial investment in digitalization in the capital-intensive energy sector, such as ERP implementation, IoT, and cybersecurity. This cost burden suppresses short-term profitability, thereby lowering investor perception. These results are consistent with the RBV theory, which states that digital capabilities are a strategic resource, but their benefits are more felt in the long term. Conversely, ESG disclosure (X2) has a positive and significant effect on financial performance (t = 4.000; Sig = 0.0001). The coefficient of 5.557 indicates that each increase in ESG disclosure increases company value. This finding suggests that

investors respond positively to corporate transparency in environmental, social, and governance areas. These results support Stakeholder Theory, which asserts that corporate legitimacy and reputation are enhanced through good sustainability reporting.

Table 5 Model Summary

R-squared	Adjusted R-squared	F-statistic	Prob(F-statistic)	Durbin-Watson stat
0.850000	0.845000	100,0000	0.000001	1,958

The analysis results above show a significant F-statistic (Sig = 0.000001), indicating that digital transformation and ESG jointly impact financial performance. The R-squared value of 0.850 indicates that 85% of the variation in PVB can be explained by these two variables. This figure indicates that digitalization and sustainability are two very powerful strategic factors influencing the market valuation of energy companies.

DISCUSSION

The Impact of Digital Transformation on Financial Performance (PVB)

The results of the study indicate that digital transformation (X1) has a significant effect on financial performance with a coefficient of -1,080.822 and a significance value of 0.0035. Although the direction of the relationship is negative, this result still indicates that changes in the level of digitalization have a significant impact on the company's market value. The negative direction may reflect the condition that the digitalization process in the energy sector is still in the development stage, thus requiring high initial investment costs, both for the implementation of ERP systems, IoT integration, strengthening cybersecurity, and the development of digitalization units.

These high costs can reduce book value or increase market volatility in the short term, negatively impacting PVB. However, with a significance value of <0.05, these results demonstrate that digitalization remains a key factor influencing investor valuation.

This finding is in line with the Resource-Based View theory.(Barney, 1991), where digitalization is a valuable and difficult-to-imitate strategic resource. These results are also consistent with research(Han, 2024)which explains that the initial investment burden of digitalization can impact company value, particularly in capital-intensive sectors like energy. Thus, digitalization has been shown to be a factor influencing financial performance, although the direction of this influence still depends on the company's readiness to manage the costs of transformation.

The Impact of ESG Disclosure on Financial Performance (PVB)

The regression results show that the ESG disclosure variable (X2) has a positive and significant influence on PVB with a coefficient of 5.557909, a t-statistic of 4.000000, and a significance value of 0.0001. These results prove that the better a company's ESG disclosure, the higher the company's market value compared to its book value.

This demonstrates that investors respond positively to energy companies that demonstrate high levels of transparency and accountability regarding environmental, social, and governance issues. ESG disclosure signals reputation and sustainability commitment, bolstering investor confidence, particularly amid the global push toward a green energy transition.

This finding supports Stakeholder Theory(Freeman, 1984), which states that corporate legitimacy increases when the company is able to meet stakeholder expectations regarding social and environmental responsibility. The results of this study are also consistent with other studies.(Chen, 2025)And(Li et al., 2025)which found that ESG can strengthen a company's market value by enhancing its reputation, investor confidence, and mitigating long-term risks. Thus, ESG is no longer just a compliance practice but has become a factor with a real economic impact on Indonesian energy companies. In the context of Indonesian regulations, policies such as POJK 51/2017, SEOJK 16/2021, and the development of the IDX ESG Leaders index have strengthened the role of ESG as an indicator for assessing corporate risk and performance.

The F-test results showed a significance value of 0.000001, indicating that digital transformation and ESG simultaneously significantly influence financial performance. This means that the combination of these two variables together makes a significant contribution to changes in the market value of energy companies. The R-squared value of 0.850 indicates that 85% of the variation in PVB can be explained by the model, indicating very high predictive ability. This indicates that digitalization and sustainability practices are two strategic factors that together can substantially influence investor perceptions and market valuations. The Durbin-Watson value of 1.958 confirms that the model is free from autocorrelation, thus the model structure is considered stable and reliable.

CONCLUSION

This study concludes that digital transformation and ESG disclosure significantly influence the financial performance of energy companies in Indonesia. Panel data regression results show that digital transformation has a significant negative effect, indicating that investments in digital technologies such as ERP, IoT, and cybersecurity systems still incur significant costs, thus reducing a company's market value in the short term. Conversely, ESG disclosure has a positive and significant effect on Price to Book Value (PVB), reflecting that transparent sustainability practices can increase investor confidence and strengthen a company's legitimacy. Simultaneously, both variables explain 85% of the variation in financial performance, indicating that the combination of digitalization and ESG is a strategic component in shaping the value of energy companies in the energy transition era. These findings contribute to strengthening the Resource-Based View and Stakeholder Theory, by confirming that digital capabilities and sustainability practices are strategic resources that influence company value. This study is limited by the use of a four-year data period and does not include control variables such as company size or profitability. Therefore, future research is recommended to expand the observation period, add moderating or mediating variables, and adopt a multi-sector approach to make the results more comprehensive and generalizable.

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APPENDIX

Sheet1

	CODE	YEAR	X1	X2	Y
2	AADI	2021	0.73	0.470951	2.09996715
3	AADI	2022	0.64	0.295242	0.08854
4	AADI	2023	0.73	0.329202	0.249039
5	AADI	2024	0.75	0.744808	0.137307
6	ABMM	2021	0.27	0.344253	1.76567049
7	ABMM	2022	0.73	0.293146	2.13628768
8	ABMM	2023	0.82	0.989155	2.10841449
9	ABMM	2024	0.83	0.66189	0.247999
10	ADMR	2021	0.55	0.405284	0.589779
11	ADMR	2022	0.45	0.336794	0.584079
12	ADMR	2023	0.46	0.542434	0.859068
13	ADMR	2024	0.73	0.889354	0.590379
14	ADRO	2021	0.64	0.577433	240.705195
15	ADRO	2022	0.73	0.857464	212.107
16	ADRO	2023	0.9	0.968527	116.423
17	ADRO	2024	0.91	0.874832	0.459434
18	AIMS	2021	0.64	0.532112	0.62968005
19	AIMS	2022	0.82	0.576813	0.998571
20	AIMS	2023	0.7	0.861001	0.420294
21	AIMS	2024	0.73	0.913034	0.528869
22	AKRA	2021	0.82	0	49.995033
23	AKRA	2022	0.82	0.355217	36.9481494
24	AKRA	2023	0.82	0.501186	35.2586155
25	AKRA	2024	0.64	0.839804	0.188903
26	ALII	2021	0.64	0.056483	1.33201189
27	ALII	2022	0.73	0.480506	0.60065
28	ALII	2023	0.82	0.889244	0.586854
29	ALII	2024	0.73	0.169056	0.656497
30	APEX	2021	0	0.562953	4.27861856
31	APEX	2022	0	0.830291	0.611257
32	APEX	2023	0.73	0.231897	0.726023
33	APEX	2024	0.64	0.732966	0.346261
34	ARII	2021	0.64	0	1.18072743
35	ARII	2022	0.55	0	0.440117
36	ARII	2023	0.73	0.636575	0.027469
37	ARII	2024	0.64	0.829569	0.211913
38	ATLA	2021	0	0.025336	0.783872
39	ATLA	2022	0.55	0.987457	0.015461
40	ATLA	2023	0.64	0.485214	0.984181
41	ATLA	2024	0.91	0.560904	0.157243
42	BBRM	2021	0.45	0.018707	0.56391943
43	BBRM	2022	0.64	0.609039	0.129566
44	BBRM	2023	0.64	0.103412	0.37651
45	BBRM	2024	0.82	0.087868	0.017648
46	BESS	2021	0.64	0	3.72748716
47	BESS	2022	0.73	0.119982	0.039982
48	BESS	2023	0.73	0.160246	0.145391
49	BESS	2024	0.64	0.45457	0.728353
50	BIPI	2021	0.45	0.403052	0.26830622
51	BIPI	2022	0.73	0.569486	0.187259
52	BIPI	2023	0.55	0.594676	0.78613
53	BIPI	2024	0.45	0.857283	0.651088
54	BOAT	2021	0	0.460695	0.427977
55	BOAT	2022	0.55	0.617832	0.031727
56	BOAT	2023	0.73	0.398481	0.156126
57	BOAT	2024	0.91	0.685937	0.412196
58	BSML	2021	0.64	0.689138	2.93926518
59	BSML	2022	0.55	0.96225	0.918055
60	BSML	2023	0.73	0.451364	0.331755
61	BSML	2024	0.82	0.410533	0.325362
62	BSSR	2021	0.45	0.320603	3.70416748
63	BSSR	2022	0.73	0.196088	0.483625
64	BSSR	2023	0.82	0.217412	0.851112
65	BSSR	2024	0.91	0.939727	0.635263
66	BULL	2021	0.73	0	5.05050505
67	BULL	2022	0.73	0.358404	0.099988
68	BULL	2023	0.91	0.505636	0.210152
69	BULL	2024	1	0.665569	0.694686
70	BUMI	2021	0.82	0	403.486
71	BUMI	2022	0.55	0.831481	456.17
72	BUMI	2023	0.91	0.846023	398.343782
73	BUMI	2024	0.73	0.326325	0.382223
74	BYAN	2021	0	0	856.74
75	BYAN	2022	0	0.673149	102.285
76	BYAN	2023	0.73	0.650559	111.73
77	BYAN	2024	0.82	0.739865	0.685654
78	CGAS	2021	0.64	0.338656	0.711754
79	CGAS	2022	0.55	0.621977	0.346824
80	CGAS	2023	0.73	0.561534	0.145553
81	CGAS	2024	0.82	0.637184	0.101199
82	CUAN	2021	0.55	0	2.31939337
83	CUAN	2022	0.91	0.085227	0.30387
84	CUAN	2023	0.82	0.095398	0.198364
85	CUAN	2024	0.91	0.024025	0.439464
86	DEWA	2021	0	0.127401	849571.598
87	DEWA	2022	0.64	0.392832	1990237.25
88	DEWA	2023	0.82	0.094073	641483.935
89	DEWA	2024	0.73	0.47887	0.428919
90	DOID	2021	0.45	0.993351	148.445093
91	DOID	2022	0.64	0.117789	75.1816262
92	DOID	2023	0.73	0.992428	52.187573
93	DOID	2024	1	0.293992	0.980727
94	DSSA	2021	0	0.029774	59.5244677
95	DSSA	2022	0.64	0.601684	29.8222362
96	DSSA	2023	0.64	0.43798	20.0689409
97	DSSA	2024	0.55	0.252238	0.8994
98	DWLG	2022	0.64	0.597539	0.681095
99	DWLG	2023	0.7	0.828976	0.874041
100	DWLG	2024	0.73	0.927061	0.876267
101	DWLG	2024	0.75	0.119953	0.310665
102	ELSA	2021	0	0.875439	105.446
103	ELSA	2022	0.64	0.490926	119.599
104	ELSA	2023	0.55	0.899525	606.454
105	ELSA	2024	0.64	0.37357	0.755284

	A	B	C	D	E
106	ENRG	2021	[illegible]	[illegible]	[illegible]
107	ENRG	2022	0.82	0.67327	225.544
108	ENRG	2023	0.82	0.797731	162.133
109	ENRG	2024	0.73	0.980655	0.602084
110	FIRE	2021	0.73	0.114955	324.321
111	FIRE	2021	0.74	0.665064	379.135
112	FIRE	2022	0.82	0.152151	0.945459
113	FIRE	2023	0.91	0.537671	0.004132
114	GEMS	2021	0.73	0.653629	134.044
115	GEMS	2022	0.45	0.957647	163.791
116	GEMS	2023	0.73	0.238073	132.769
117	GEMS	2024	0.91	0.094309	0.693198
118	GTBO	2021	0.45	0.589387	0
119	GTBO	2022	0.64	0.388015	0.13776
120	GTBO	2023	0.82	0.515676	0.28736
121	GTBO	2024	0.73	0.951116	0.723837
122	HILL	2021	0.73	0.314986	24.5421815
123	HILL	2022	0.82	0.137842	0.798847
124	HILL	2023	0.73	0.337178	0.659506
125	HILL	2024	0.73	0.185443	0.195839
126	HITS	2021	0.45	0.201821	121.892
127	HITS	2022	0.82	0.323302	113.058
128	HITS	2023	0.91	0.503594	100.997
129	HITS	2024	0.64	0.561362	0.250162
130	HRUM	2021	0.45	0	140.315
131	HRUM	2022	0.55	0	207.04
132	HRUM	2023	0.64	0.554494	202.402
133	HRUM	2024	0.82	0.779065	0.520826
134	HUMI	2021	0.73	0.096909	0.311119
135	HUMI	2022	0.55	0.431275	0.058483
136	HUMI	2023	0.82	0.305026	0.905708
137	HUMI	2024	0.82	0.013859	0.657226
138	INDY	2021	0.82	0.306726	274.683
139	INDY	2022	0.64	0.953524	23.6073334
140	INDY	2023	0.45	0.097991	23.6593408
141	INDY	2024	0.82	0.330597	0.128183
142	INPS	2021	0.36	0.501845	220.313
143	INPS	2022	0.91	0.7835	0.823505
144	INPS	2023	0.91	0.871852	0.660708
145	INPS	2024	0.64	0.327302	0.608694
146	ITMA	2021	0.45	0	13.5453475
147	ITMA	2022	0.64	0	0.033634
148	ITMA	2023	0.73	0.131936	0.289592
149	ITMA	2024	0.73	0.708129	0.936215
150	ITMG	2021	0.64	0.956552	18.1489825
151	ITMG	2022	0.73	0.577417	28.5066042
152	ITMG	2023	0.73	0.274301	11.4695351
153	ITMG	2024	0.73	0.924618	0.914669
154	KKGI	2021	0	0.808811	0.9457649
155	KKGI	2022	0.64	0.040834	147.666
156	KKGI	2023	0.73	0.722021	130.764
157	KKGI	2024	0.64	0.326553	0.000114
158	KOPI	2021	0.82	0.405684	614.886
159	KOPI	2022	0.64	0.427937	0.054674
160	KOPI	2023	0.73	0.78139	0.420698
161	KOPI	2024	1	0.138135	0.702938
162	LEAD	2021	0.64	0.701538	132.578
163	LEAD	2022	0.64	0.355173	0.583442
164	LEAD	2023	0.64	0.287167	0.056467
165	LEAD	2024	0.64	0.390651	0.375992
166	MAHA	2021	0.64	0	0.64095567
167	MAHA	2022	0.91	0.859943	0.568435
168	MAHA	2023	0.64	0.148804	0.012334
169	MAHA	2024	0.82	0.687542	0.127334
170	MBAP	2021	0.73	0.801903	263.926
171	MBAP	2022	0.73	0.466151	0.472768
172	MBAP	2023	0.55	0.642226	0.488826
173	MBAP	2024	0.82	0.607822	0.954495
174	MBSS	2021	0.64	0.730774	614.886
175	MBSS	2022	0.91	0.285076	331.989
176	MBSS	2023	0.91	0.712282	433.351
177	MBSS	2024	0.73	0.534104	0.728808
178	MCOL	2021	0	0.053314	188.911
179	MCOL	2022	0.64	0.0924	0.075067
180	MCOL	2023	0.82	0.032732	90.2370081
181	MCOL	2024	0.64	0.324555	0.230257
182	MEDC	2021	0.64	0.01978	132.578
183	MEDC	2022	0.55	0.769765	136.9
184	MEDC	2023	0.82	0.453586	200.647
185	MEDC	2024	0.36	0.875429	0.966287
186	MKAP	2021	0.73	0.696361	0.693001
187	MKAP	2022	0.64	0.650969	0.878706
188	MKAP	2023	0.64	0.398864	0.909617
189	MKAP	2024	0.73	0.346129	0.956316
190	MYOH	2021	0	0.695599	263.926
191	MYOH	2022	0.64	0.427618	110.968
192	MYOH	2023	0	0.204672	129.526
193	MYOH	2024	0.64	0.952557	0.194891
194	PGAS	2021	0.45	0.664393	250.316
195	PGAS	2022	0.64	0.851645	195.913
196	PGAS	2023	0.64	0.40531	206.581
197	PGAS	2024	0.73	0.278947	0.75848
198	PKPK	2021	0.64	0.297256	250.31
199	PKPK	2022	0.82	0.695017	0.486326
200	PKPK	2023	0.45	0.026578	0.999413
201	PKPK	2024	0.55	0.504998	0.00242
202	PSSI	2021	0.64	0.814137	3.72748716
203	PSSI	2022	0.91	0.814202	9.34389934
204	PSSI	2023	0.36	0.36289	11.5952066
205	PSSI	2024	0.73	0.179828	0.946929
206	PTBA	2021	0.55	0.340283	1.8636E-05
207	PTBA	2022	0.55	0.582349	2.1862E-05
208	PTBA	2023	1	0.730319	1.6304E-05
209	PTBA	2024	0.91	0.419817	0.434003
210	PTIS	2021	0.73	0.36858	1.8636E-05
211	PTIS	2022	0.73	0.924245	0.852657

	A	B	C	D	E
193	MYOH	2024	0.64	0.952557	0.194891
194	PGAS	2021	0.45	0.664393	250.316
195	PGAS	2022	0.64	0.851645	195.913
196	PGAS	2023	0.64	0.40531	206.581
197	PGAS	2024	0.73	0.278947	0.75848
198	PKPK	2021	0.64	0.297256	250.31
199	PKPK	2022	0.82	0.695017	0.486326
200	PKPK	2023	0.45	0.026578	0.999413
201	PKPK	2024	0.55	0.504998	0.00242
202	PSSI	2021	0.64	0.814137	3.72748716
203	PSSI	2022	0.91	0.814202	9.34389934
204	PSSI	2023	0.36	0.36289	11.5952066
205	PSSI	2024	0.73	0.179828	0.946929
206	PTBA	2021	0.55	0.340283	1.8636E-05
207	PTBA	2022	0.55	0.582349	2.1862E-05
208	PTBA	2023	1	0.730319	1.6304E-05
209	PTBA	2024	0.91	0.419817	0.434003
210	PTIS	2021	0.73	0.36858	1.8636E-05
211	PTIS	2022	0.73	0.924245	0.852657
212	PTIS	2023	0.82	0.488374	0.147964
213	PTIS	2024	0.73	0.459413	0.871841
214	PTRO	2021	0.45	0.282973	0.81956614
215	PTRO	2022	0.82	0.613616	0.51576107
216	PTRO	2023	0.82	0.526946	1.9313394
217	PTRO	2024	0.91	0.991229	0.630064
218	RAJA	2021	0.45	0.728886	0.762237
219	RAJA	2022	0.55	0.208006	129.644624
220	RAJA	2023	0.55	0.523698	569.478
221	RAJA	2024	0.82	0.572359	0.293083
222	RATU	2021	0	0	0.597405
223	RATU	2022	0	0.118653	0.319858
224	RATU	2023	0.73	0.929005	0.462656
225	RATU	2024	0.82	0.997614	0.514819
226	RGAS	2021	0.55	0.7861	0.673488
227	RGAS	2022	0.64	0.515878	0.436873
228	RGAS	2023	0.45	0.594818	0.810038
229	RGAS	2024	0.64	0.944093	0.813843
230	RIGS	2021	0.64	0.22318	0.81956614
231	RIGS	2022	0.73	0.636724	0.980656
232	RIGS	2023	0.45	0.129441	0.83222
233	RIGS	2024	0.82	0.263667	0.583303
234	RMKE	2021	0.64	0.12438	449.834
235	RMKE	2022	0.64	0.942151	0.693035
236	RMKE	2023	0.64	0.827787	0.18693
237	RMKE	2024	0.91	0.667149	0.001266
238	RMKO	2021	0.73	0.444603	0.930962
239	RMKO	2022	0.73	0.919655	0.411549
240	RMKO	2023	0.64	0.379497	0.996518
241	RMKO	2024	0.55	0.238916	0.159337
242	RUIS	2021	0.45	0.318762	0.391659
243	RUIS	2022	0.91	0.502708	0.546195
244	RUIS	2023	0.73	0.198471	0.289804
245	RUIS	2024	0.64	0.654534	0.135915
246	SEMA	2021	0.55	0.78876	0.532209
247	SEMA	2022	0.82	0.556972	0.865735
248	SEMA	2023	0.45	0.601935	0.197093
249	SEMA	2024	0.64	0.70272	0.258966
250	SGER	2021	0.82	0.517795	0.484983
251	SGER	2022	0.73	0.924513	0.25925
252	SGER	2023	0.64	0.569779	0.000226
253	SGER	2024	0.73	0.238687	0.464689
254	SHIP	2021	0	0	5.46530073
255	SHIP	2022	0	0.598143	2.4642017
256	SHIP	2023	0	0.535357	5.82461935
257	SHIP	2024	0	0.375043	0.774623
258	SICO	2021	0.55	0.444669	0.934194
259	SICO	2022	0.73	0.930756	0.899721
260	SICO	2023	0.73	0.452902	0.035992
261	SICO	2024	0.64	0.993638	0.79963
262	SOCI	2021	0.82	0.082451	0.324321
263	SOCI	2022	0.82	0.648386	0.480186
264	SOCI	2023	0.55	0.319411	0,577731
265	SOCI	2024	0.64	0.14042	0.7966
266	SUNI	2021	0	0.422083	0.214667
267	SUNI	2022	0.45	0.942062	0.173744
268	SUNI	2023	0.73	0.032222	0.411729
269	SUNI	2024	0.82	0.963026	0.056368
270	SURE	2021	0.27	0.64307	5.46530073
271	SURE	2022	0.36	0.462824	0.377147
272	SURE	2023	0.82	0.783229	0.464267
273	SURE	2024	0.64	0.140248	0.557827
274	TCPI	2021	0	0.985623	128.084
275	TCPI	2022	0	0.573783	0.088742
276	TCPI	2023	0	0.504461	0.000268
277	TCPI	2024	0	0.747616	0.602105
278	TEBE	2021	0	0.720975	484.983
279	TEBE	2022	0.73	0.193171	124.104
280	TEBE	2023	0.64	0.729316	832.717
281	TEBE	2024	0.64	0.521691	0.85271
282	TOBA	2021	0.36	0.521342	379.135
283	TOBA	2022	0.45	0.700359	388.362
284	TOBA	2023	0.73	0.332806	325.415
285	TOBA	2024	0.64	0.839894	0.884189
286	TPMA	2021	0.36	0.973017	220.313
287	TPMA	2022	0.55	0.382694	374.623
288	TPMA	2023	1	0.163451	331.764
289	TPMA	2024	0.91	0.468181	0.69551
290	UNIQ	2021	0.45	0.771508	2.93926518
291	UNIQ	2022	0.73	0.348166	14.5352113
292	UNIQ	2023	0.73	0.513694	1.77514793
293	UNIQ	2024	0.64	0.281121	0.795065
294	WINS	2021	0.55	0.389013	128.082
295	WINS	2022	0.73	0.652454	112.318
296	WINS	2023	0.82	0.609534	686.203
297	WINS	2024	0.82	0.059671	0.064694