

## CHAPTER 5

### CONCLUSION AND RECOMMENDATION

#### 5.1 Conclusion

This research purpose is to explore the relationships between government green incentives, GDP per capita, international coal prices, company stock prices, ROA, and the D/E ratio. Government green incentives are derived from the energy subsidies. The use of company stock price, ROA, and D/E ratio is to see the process of green transition of the company. This research also includes common size analysis to give deeper insight into the resource allocation, and their readability of conducting green transition.

This research finds that the D/E ratio of listed private coal mining companies has a significant relation with green incentives. This finding implies that company financial constraint may affect their reliance on government incentives, and influence the allocation of green incentives. The research also finds that international coal prices significantly influence the coal mining company ROA indicating the benefits received by private coal mining companies from international coal price fluctuation, and supporting the narrative that Indonesia has been befallen by the resource curse. Stock prices also significantly influence the company's D/E ratio. An increase in the stock price may lead to the reduction of the D/E ratio.

To see if the coal mining company incentives on conducting green transition or investing in green projects regardless of the incentives from the government. The researcher conducts a common size analysis. From the common size analysis, this research found that one of the five companies, DSSA, has an increase in their reliance on coal mining operations. The other four: GEMS, ADRO, PTBA, and BYAN, indeed have decreased their reliance. However, these companies are incentivized by more efficient and sustainable

operational activity. The research also found that only DSSA didn't allocate funds for land reclamation and mine closure. The biggest fund allocation for this ESG practice is PTBA. Lastly, this research finds that all the companies have low financial constraints and are capable of conducting green transition and investing in green projects (Barabanov et al., 2021; Lv & Zhou, 2023).

## **5.2 Limitations**

There are view limitations and constraints to this research. The first limitation are limited time frame. The time collected for each data only starts from 2012 to 2022, or 11 years. The second is this research data is gathered from publicly available data. Therefore, there could be detailed information that is missing and could impact the depth of the analysis and result. This analysis also only analyses 5 (five) mining companies. Even though these chosen companies are among the largest, in terms of market capitalization. The sample size could be considered small and could not guarantee the generalizability of the findings. In the data analysis process, this research uses Engle-Granger Causality.

Considering the data of the year is only 11 years, achieving stationary data may be challenging. Therefore it may impact the robustness of the research. The use of common size analysis to complement this research also could not fully capture the dynamics of the process of green transition of the company. Within this research, external factors such as technological advancement, regulatory changes, etc. are not included. Lastly, the data regarding the company are gathered from the company's annual report. This may result in bias since the company may show the financial performance and green transition in a more favorable light. Which may impact the result of the analysis.

## **5.3 Recommendations & Implications**

### **5.3.1 Government or Policymakers**

From the result of this research, the Indonesian government needs to consider utilizing tax incentives. Tax incentives policy also needs to consider the size of the company, the number of greenhouse gases emitted, and other considerations. The government also could create adjusted green insurance, using China's green insurance as an example. Creating green finance reform and innovation zones could also be considered. Remembering some areas or some sectors may contribute more to climate change.

Indonesia's government also needs to increase the involvement of third parties especially in the financial sector to support the transition of the coal mining companies such as green insurance, and green credit. The Indonesian government also needs to create, adopt, and enforce the policy of green investment in the private coal mining companies, and not only focus on the public company. These include fair pricing structure, tax incentives/ environmental tax, clear budgetary structure, and sustainable management structure policy. Therefore, the Indonesian government could help and incentivize the traditional sector such as coal mining, on the private side, to transition into green and sustainable business practices and also increase their motivation to invest in green projects.

### **5.3.2 Industry Leader**

The implication for an industry leader of private coal mining companies is to put more consideration into the environmental impact of their activity. This can be achieved by increasing the budget for the R&D division for further technology. Industry leaders also need to put a considerable amount of resources into conducting land reclamation and land disclosure. Collaboration

and partnership with third parties are also advisable, to ensure sustainable growth while also mitigating the upcoming risk of the green transition policies.

Investing in green projects also needs to be done as soon as possible to prepare for the upcoming policy change. Lastly, industry leaders need to reduce the reliance on financial growth in mining operations. Instead, industry leaders could focus more on providing energy supply from renewable sources or using better mining equipment that has less effect on the environment. Therefore, the industry leader could be an example of the transition towards a green economy, without putting a risk on the company for the current status quo and the future.

### **5.3.3 Future Research**

As the global world emphasizes more on sustainability green practices continue to grow. It is important to understand the financial implications of these initiatives and the macroeconomic condition of traditional industries such as coal mining. This research has laid the groundwork for further research and may open further discussion and research in the fields of economics and its impact on the financial performance and company decisions of coal mining companies in Indonesia, and even other countries. Future research could include more coal mining companies in Indonesia, or an increase in the nation to compare the effect of different policies and regulations on environment control, and market conditions.

There are also variables that could be analyzed in further research such as FDI, ESG scores, carbon footprint, and other green metrics. An increase in the time frame could also be a consideration since it could provide a deeper analysis of the long-term impact of government incentives, and other variables. This research also only focuses on private coal mining companies. This means that further research may include other sectors to see the difference in the effect of government incentives, policy, and regulation. Further research also could

analyze investor behavior in relation towards investment choices. Therefore, by addressing the gaps in this research. Further research could contribute to creating a more comprehensive understanding of the intersection of green economics on corporate financial performance, and motivation in conducting green transition.



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## Appendix 1

### Data Recap

Data return of all the variables

1	Year	Company	Stock Prices	ROA	D/E	Green Incentives	GDP Per Cap	Inter CoalP
2	2013	PTBA	-0,32	-0,31	-0,27	0,63	0,09	0,16
3	2013	BYAN	0,01	-1,45	0,18	0,63	0,09	0,16
4	2013	ADRO	-0,31	0,10	0,93	0,63	0,09	0,16
5	2013	DSSA	-0,01	-2,09	0,63	0,63	0,09	0,16
6	2013	GEMS	-0,01	-0,41	-0,10	0,63	0,09	0,16
7	2014	PTBA	0,23	-0,14	0,95	0,03	0,09	-0,27
8	2014	BYAN	-0,22	-1,80	0,43	0,03	0,09	-0,27
9	2014	ADRO	-0,05	-0,40	-0,24	0,03	0,09	-0,27
10	2014	DSSA	-0,04	3,62	0,43	0,03	0,09	-0,27
11	2014	GEMS	-0,11	-0,16	-0,13	0,03	0,09	-0,27
12	2015	PTBA	-0,64	-0,11	0,16	-0,51	0,08	-0,10
13	2015	BYAN	0,18	-1,57	0,61	-0,51	0,08	-0,10
14	2015	ADRO	-0,50	-0,83	0,81	-0,51	0,08	-0,10
15	2015	DSSA	-0,06	-0,46	0,25	-0,51	0,08	-0,10
16	2015	GEMS	-0,15	-0,11	-0,20	-0,51	0,08	-0,10
17	2016	PTBA	1,76	-0,10	-0,07	-0,31	0,06	0,69
18	2016	BYAN	-0,24	-8,52	-0,17	-0,31	0,06	0,69
19	2016	ADRO	2,29	15,40	-0,14	-0,31	0,06	0,69
20	2016	DSSA	-0,34	-1,25	-0,24	-0,31	0,06	0,69
21	2016	GEMS	0,73	1,06	-0,07	-0,31	0,06	0,69
22	2017	PTBA	-0,02	0,90	-0,22	-0,05	0,08	0,15
23	2017	BYAN	0,77	0,60	0,19	-0,05	0,08	0,15
24	2017	ADRO	0,10	1,20	1,40	-0,05	0,08	0,15
25	2017	DSSA	0,74	16,41	-0,79	-0,05	0,08	0,15
26	2017	GEMS	-0,11	0,51	-0,08	-0,05	0,08	0,15
27	2018	PTBA	0,75	0,02	-0,18	0,05	0,08	0,08
28	2018	BYAN	0,88	-0,23	0,40	0,05	0,08	0,08
29	2018	ADRO	-0,35	-0,29	0,20	0,05	0,08	0,08
30	2018	DSSA	0,09	0,20	-0,04	0,05	0,08	0,08
31	2018	GEMS	0,00	-0,14	-0,04	0,05	0,08	0,08
32	2019	PTBA	-0,38	-0,27	-0,14	0,69	0,06	-0,36
33	2019	BYAN	-0,20	-0,46	0,03	0,69	0,06	-0,36
34	2019	ADRO	0,28	-0,40	-0,03	0,69	0,06	-0,36
35	2019	DSSA	0,01	-0,60	0,53	0,69	0,06	-0,36
36	2019	GEMS	0,00	-0,11	0,27	0,69	0,06	-0,36
37	2020	PTBA	0,06	-0,35	0,01	-0,40	-0,03	0,20
38	2020	BYAN	-0,03	-2,04	-0,35	-0,40	-0,03	0,20
39	2020	ADRO	-0,08	0,38	0,13	-0,40	-0,03	0,20
40	2020	DSSA	-0,22	0,16	-0,17	-0,40	-0,03	0,20
41	2020	GEMS	0,00	-0,59	-0,24	-0,40	-0,03	0,20
42	2021	PTBA	-0,04	1,22	0,16	0,16	0,09	1,14
43	2021	BYAN	0,75	-5,42	-0,13	0,16	0,09	1,14
44	2021	ADRO	0,57	2,63	0,22	0,16	0,09	1,14
45	2021	DSSA	2,85	1,45	-0,65	0,16	0,09	1,14
46	2021	GEMS	1,72	4,46	0,14	0,16	0,09	1,14
47	2022	PTBA	0,36	0,27	0,16	0,89	0,15	1,60
48	2022	BYAN	6,78	1,30	0,60	0,89	0,15	1,60
49	2022	ADRO	0,71	0,44	-0,37	0,89	0,15	1,60
50	2022	DSSA	-0,17	0,12	2,19	0,89	0,15	1,60
51	2022	GEMS	-0,03	0,94	-0,07	0,89	0,15	1,60

### Result of VAR Granger causality

Dependent variable: DGREEN\_INCENTIVES

Excluded	Chi-sq	df	Prob.
DGDP_PER_CAP	0.466800	2	0.7918
DINTER_COALP	0.115408	2	0.9439
STOCK_PRICES	0.899920	2	0.6377
ROA	0.437059	2	0.8037
D_E	7.041731	2	0.0296
All	8.348676	10	0.5948

Dependent variable: DGDP\_PER\_CAP

Excluded	Chi-sq	df	Prob.
DGREEN_INCENTIVES	0.342080	2	0.8428
DINTER_COALP	0.159062	2	0.9235
STOCK_PRICES	0.346211	2	0.8410
ROA	0.344995	2	0.8416
D_E	3.564379	2	0.1683
All	3.993426	10	0.9476

Dependent variable: DINTER\_COALP

Excluded	Chi-sq	df	Prob.
DGREEN_INCENTIVES	0.008842	2	0.9956
DGDP_PER_CAP	0.016944	2	0.9916
STOCK_PRICES	0.089512	2	0.9562
ROA	0.021145	2	0.9895
D_E	0.168791	2	0.9191
All	0.258314	10	1.0000

Dependent variable: STOCK\_PRICES

Excluded	Chi-sq	df	Prob.
DGREEN_INCENTIVES	2.543593	2	0.2803
DGDP_PER_CAP	0.522367	2	0.7701
DINTER_COALP	1.610304	2	0.4470
ROA	0.624493	2	0.7318
D_E	0.021464	2	0.9893
All	10.16430	10	0.4262

Dependent variable: ROA

Excluded	Chi-sq	df	Prob.
DGREEN_INCENTIVES	2.568884	2	0.2768
DGDP_PER_CAP	1.952016	2	0.3768
DINTER_COALP	9.530132	2	0.0085
STOCK_PRICES	1.457369	2	0.4825
D_E	1.678858	2	0.4320
All	13.62999	10	0.1905

Dependent variable: D\_E

Excluded	Chi-sq	df	Prob.
DGREEN_INCENTIVES	1.296093	2	0.5231
DGDP_PER_CAP	2.280242	2	0.3198
DINTER_COALP	4.593567	2	0.1006
STOCK_PRICES	11.48744	2	0.0032
ROA	3.702430	2	0.1570
All	17.43426	10	0.0653

## Data of market capitalization

Stockbit

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81 Stocks

Symbol	Company	Price	Change %	Market Cap	Liquidity (Rp)
BYAN	Bayan Resources Tbk.	19,400	-100 (-0.51%)	646,667 B	1 B
DSSA	Dian Swastatika Sentosa Tbk	121,275	25 (+0.02%)	93,449 B	150 M
ADRO	Adaro Energy Indonesia Tbk.	2,660	-10 (-0.37%)	85,083 B	139 B
CUAN	Petrindo Jaya Kreasi Tbk.	5,250	-950 (-15.32%)	59,020 B	92 B
TCPI	Transcoal Pacific Tbk.	7,275	-75 (-1.02%)	36,375 B	78 B
MEDC	Medco Energi Internasional Tbk	1,425	-25 (-1.72%)	35,819 B	103 B
AKRA	AKR Corporindo Tbk.	1,750	0 (0.00%)	35,129 B	54 B
GEMS	Golden Energy Mines Tbk.	5,850	-25 (-0.43%)	34,412 B	419 M
PTBA	Bukit Asam Tbk.	2,840	-40 (-1.39%)	32,719 B	57 B
BUMI	Bumi Resources Tbk	86	-2 (-2.27%)	31,934 B	41 B
ITMG	Indo Tambangraya Megah Tbk.	27,100	-300 (-1.09%)	30,621 B	40 B
PGAS	Perusahaan Gas Negara Tbk.	1,235	40 (+3.35%)	29,938 B	78 B
MCOL	Prima Andalan Mandiri Tbk.	5,825	-50 (-0.85%)	20,694 B	329 M
HRUM	Harum Energy Tbk.	1,410	30 (+2.17%)	19,061 B	18 B
ABMM	ABM Investama Tbk.	3,640	-30 (-0.82%)	10,022 B	4 B
BSSR	Baramuli Suksesarane Tbk.	3,680	10 (+0.27%)	9,629 B	1 B

## Appendix 2

### Thesis\_Fernando Halim

#### ORIGINALITY REPORT

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