

IMPACT OF EXTERNAL AND INTERNAL FACTORS ON THE FINANCIAL FLEXIBILITY OF COAL COMPANIES

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ABSTRACT: *The decreasing of coal's price in 2011-2015 caused by the expansion of shale gas production, oversupply, and the increasing of international clean energy campaign. It caused by the decreasing of earning before interest and tax that affected financial flexibility of coal companies. This study aims to analyse financial flexibility and the impact of external and internal factors on the financial flexibility of coal companies. This study used simulation method with simultaneous equations model consist of 10 structural equations and 13 identity equations estimated using 2SLS (Two Stage Least Squares) method. The result showed there were several coal companies that had financial flexibility. If China's gross domestic product decreased by 2%, the exchange rate of rupiah to USD also depreciated by 2%. The company would anticipated by lowering the production cost by 5% which would affected the company's financial flexibility by 43.51% (debt service coverage ratio of 1.51). If the international coal's price decreased by 2% and the exchange rate of rupiah to USD depreciated by 2%, the company would anticipated by lowering the production cost by 5%. It would increased the financial flexibility of coal companies by 28.62% (debt service coverage ratio of 1.36).*

KEYWORDS: Coal Companies, External and Internal Factors, Debt Service Coverage Ratio, Financial Flexibility, Two Stage Least Squares (2SLS)

INTRODUCTION

Business development causes the organization to look for the occurrence changes. Prihadi (2013) said that financial flexibility is a condition which firms have flexibility to deal with unexpected situations in their funding. More debt will reduce the flexibility in obtaining loans. He also said that the company have financial flexibility if can fulfill all its obligations in the form of interest and loan principal to the creditor.

Financial flexibility reflects the company's ability to cope and handle future events and plays an important role to make future investments (Bouchani and Ghambari 2015). The coal prices declined in early 2011 to 2015. International coal prices are presented in Figure 1.

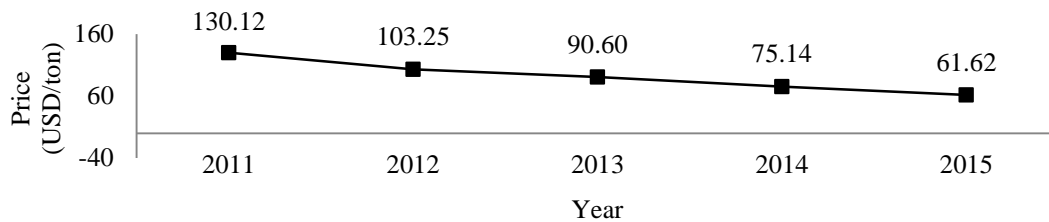


Figure 1. Coal's price based on Australian Thermal Coal 2011-2015

Source: Index Mundi (2016)

Figure 1 shows the coal's price decreased in 2011-2015. The decline in coal prices occurred following the expansion of shale gas production by the United States (Falianti 2015), excess supply of coal (IEA 2013 in Fiyanto 2014) and the increasing international clean energy campaign that led many countries to start reducing the use of coal as a source of power (Bintang 2016).

The decline of China's economy as one of the largest coal importing countries in 2015, was the lowest over 25 years. This affected for coal commodities demand. This incident happened at the same time with the decline of Indonesian coal commodity exports. The largest export decline in 2015 occurred in China, India and South Korea. The downward trend in earnings before interest and tax (EBIT) and sales of coal companies also happened at the same time. The chart are presented in Figure 2.

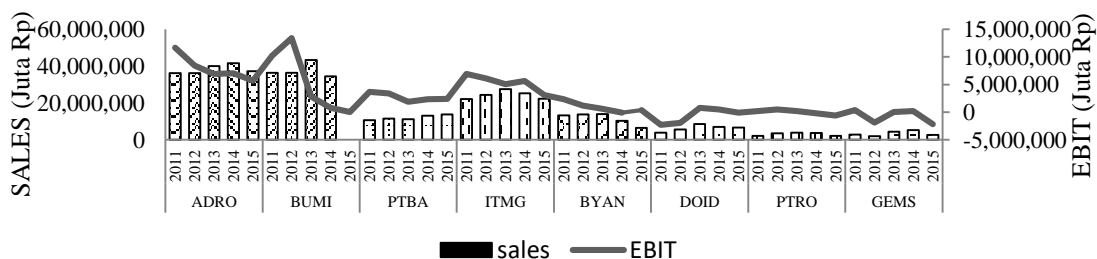


Figure 2. Chart of earning before interest and tax and coal company sales year 2011-2015

Source: Indonesia Stock Exchange (2016)

Figure 2 shows the coal company's EBIT tends to decrease in 2011-2015. The declines and fluctuations of coal company sales caused the EBIT to be fluctuative. Overall, the highest sales occurred in 2013. While some companies decreased in 2014 and 2015, some others companies increased their sales.

Financial flexibility related to liabilities. The coal industry is an industry that requires large capital, so it probably will not be enough if only using internal capital. Therefore, the company should seek other funding sources, such as external financing by indebtedness. The coal company's debt picture is presented in Figure 3.

Debt to Asset Ratio

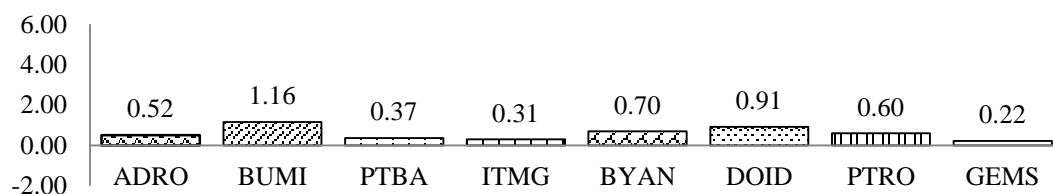


Figure 3. The average debt to asset ratio of listed coal companies indonesia stock exchange 2011-2015

Source: Indonesia Stock Exchange (2016)

Figure 3 shows the average debt to asset ratio (DAR) of coal companies in 2011-2015 varies considerably. If the company failed to fulfill its obligations to the lender, this would caused the company to experience financial distress. Companies that have smaller score than 1.20 of Debt Service Coverage Ratio (DSCR), are considered to have no financial flexibility (Ruster 1996). The description of the coal company's ability to meet its assessed obligations using DSCR is presented in Figure 4.

Debt Service Coverage Ratio

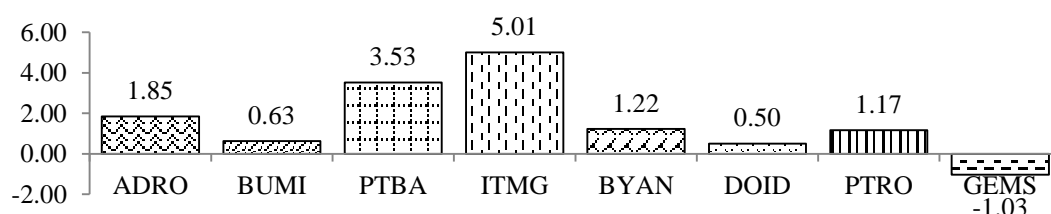


Figure 4. Average debt service coverage ratio of coal companies listed on indonesia stock exchange 2011-2015

Sumber: Indonesia stock exchange (2016)

Figure 4 shows the average value of DSCR coal companies with financial flexibility and no financial flexibility. Therefore it is necessary to examine the external and internal factors that affect the company and its impact on the financial flexibility of coal companies. The objectives of the study were to analyze: (1) the financial flexibility of coal companies, and (2) the impact of external and internal factors on the financial flexibility of coal firms. Financial flexibility of

coal companies is assessed using debt service coverage ratio. The companies studied were 8 (eight) coal companies listed in Indonesia Stock Exchange for the period of 2011-2015. The data used was data pool.

The novelty is shown in the simulation which aims to analyze the external and internal factors that give impact to the expected increase of debt service coverage ratio which is an indicator to assess the financial flexibility of the coal company and use simultaneous equation system model.

LITERATURE REVIEW

Gamba and Triantis (2007) said that financial flexibility reflects a company's ability to access and restructure its finances at minimum cost. Financial flexibility able the company to avoid difficult financial circumstances such as negative shocks and financial investment preparing. Hochmuth (2010) said that financial flexibility can be seen as a company's ability to succeed in dealing with events and taking advantage of unexpected investment opportunities depending on the company's financial policies and capital structure. Financial flexibility reflects the company's ability to cope and handle future events and plays an important role in enabling managers to make future investments (Bouchani and Ghambari 2015).

The Financial Accounting Standards Board (FASB) defined financial flexibility as an institutional capacity to take effective steps to change the cash flow trend in response to unexpected needs and opportunities (King'wara 2015). It can be synthesized that financial flexibility is the ability of a company to mobilize financial resources in the face of unforeseen events, confronting, and handling future events that are uncertain.

Prihadi (2013) said that financial flexibility is a condition in which firms have flexibility in dealing with unexpected situations in their funding. The large amount of debt will reduce the flexibility to obtain loans. Creditor restrictions on selling assets make the company's space limited to sell the assets when needed. The company have financial flexibility if the company can fulfill all its obligations such as interest and loan principal to creditors. Long-term creditor differs from short-term creditors. Long-term creditors are very concerned on the company's ability to meet short-term obligations, namely the ability to pay interest and long-term obligations, namely the ability to pay principal. They pay more attention to the company's solvency. The company's solvency describes a company's ability to meet its long-term obligations.

The focus of long-term creditors' attention is primarily on the earnings outlook and cash flow forecasts to measure risk. However, they can not ignore the importance of balancing the proportion of assets funded by creditors and those funded by company owners. The proportion balance between assets funded by creditors and those funded by company owners is measured by debt to equity ratio which calculated by total debt divided by total equity (Darminto 2011). The interest rate multiplication ratio (time interest earned) is calculated by dividing the earning before interest and tax with interest expense. The TIE ratio measures the decreasing of operating income before the company is unable to meet its annual interest costs. Failure to pay interest will cause the creditor to take legal action and possibly end up with bankruptcy (Brigham and Houston 2010).

Pranowo (2010) said that debt service coverage ratio (DSCR) is the ability of the company in fulfilling its obligation to pay the debt, both principal and interest payment. Companies with DSCR values smaller than 1.20 will have financial distress (Ruster 1996). In reality, Pranowo (2010) explained that there are some companies having DSCR less than 1.20, but still can pay its obligations to external parties. However, this indicates that the funds used to fulfill their obligations to banks come from external parties, can be from shareholders, or sister companies that still have better financial capabilities.

METHODOLOGY

The data used are pool data taken from the comprehensive income statement, the statement of financial position, cash flow statement, and notes to the financial statements, issued by coal companies listed in Indonesia Stock Exchange (BEI) in 2011-2015. Data is accessed through www.idx.co.id and other websites to complete the research data, including: www.bi.go.id, www.bps.go.id, www.worldbank.org, www.indexmundi.com, and International Energy Agency (IEA).

Sample determination in this research using purposive sampling method. The company selected is PT Adaro Energy Tbk (ADRO), PT Bumi Resources Tbk (BUMI), PT Tambang Batubara Bukit Asam Tbk (PTBA), PT Indo Tambang Raya Megah Tbk (ITMG), PT Bayan Resources Tbk (BYAN), PT Delta Dunia Propindo Tbk (DOID), PT Petrosea Tbk (PTRO) and PT Golden Energy Mines Tbk (GEMS).

The linkage diagram of the variables in the coal company's financial flexibility model is presented in Figure 6. The econometric model specification in the form of a simultaneous equation system, as follows:

1. Export Coal Price

$$PX = PI * (1 - (TRX/100)) \quad (1)$$

2. Total Sales of Coal Exports

$$QX_{it} = a_0 + a_1 PX_{it-1} + a_2 EXR_{it-1} + a_3 GDPC_{it} + a_4 BIR_{it-1} + a_5 (RR_{it} / RR_{it-1}) + a_6 QX_{it-1} + U_1 \quad (2)$$

Expected parameter mark: $a_1, a_2, a_3, a_6 > 0$ $a_4, a_5 < 0$

3. Export Coal Sales X

$$SALESX = QX * PX * EXR \quad (3)$$

4. Total Sales of Domestic Coal

$$QD_{it} = b_0 + b_1 PD_{it-1} + b_2 (BBM_{it} / BBM_{it-1}) + b_3 GDPD_{it} + b_4 (BIR_{it} / BIR_{it-1}) + b_5 (RR_{it} / RR_{it-1}) + b_6 TREN_{it} + b_7 QD_{it-1} \quad (4)$$

Expected parameter mark: $b_1, b_2, b_3, b_6, b_7 > 0$ $b_4, b_5 < 0$,

5. Domestic Coal Sales D

$$SALESD = QD * PD * EXR \quad (5)$$

6. Total Coal Sales X + D

$$SALEST = SALESX + SALESD \quad (6)$$

7. Gross profit

$$LK = SALEST - HPP \quad (7)$$

8. Operating Expenses

$$BO = BUA + BPP \quad (8)$$

9. Operating Ratio

$$\text{OR} = \text{HPP} + \text{BO/SALEST} \quad (9)$$

10. **Earning Before Interest and Tax**

$$\text{EBIT}_{it} = c_0 + c_1 \text{LK}_{it} + c_2 \text{BO}_{it} + c_3 \text{EBIT}_{it-1} + U_3 \quad (10)$$

Expected parameter mark: $d_1, d_3 > 0$, $d_2 < 0$

11. **Time Interest Earning**

$$\text{TIE}_{it} = d_0 + d_1 (\text{EBIT}_{it} - \text{EBIT}_{it-1}) + d_2 (\text{BB}_{it} / \text{BB}_{it-1}) + d_3 \text{TIE}_{it-1} + U_4 \quad (11)$$

Expected parameter mark: $d_1, d_3 > 0$, $d_2 < 0$

12. **Total Asset**

$$\text{TA} = \text{AL} + \text{ATL} \quad (12)$$

13. **Depreciation**

$$\text{D}_{it} = e_0 + e_1 \text{TA}_{it} + e_2 \text{TREN}_{it} + e_3 \text{D}_{it-1} + U_5 \quad (13)$$

Expected parameter mark: $e_1, e_2, e_3 > 0$

14. **Amortization**

$$\text{A}_{it} = f_0 + f_1 \text{TA}_{it} + f_2 \text{TREN}_{it} + U_6 \quad (14)$$

Expected parameter mark: $f_1, f_2 > 0$

15. **Earning Before Interest Tax Depretiation and Amortization**

$$\text{EBITDA}_{it} = g_0 + g_1 \text{EBIT}_{it-1} + g_2 \text{D}_{it-1} + g_3 \text{A}_{it} + U_7 \quad (15)$$

Expected parameter mark: $g_1, g_2, g_3 > 0$

16. **Liabilities**

$$\text{L} = \text{LL} + \text{LTL} \quad (16)$$

17. **Equity**

$$\text{E} = \text{MD} + \text{TMD} + \text{SL} \quad (17)$$

18. **Debt to Equity Ratio**

$$\text{DER} = \text{L} / \text{E} \quad (18)$$

19. **Payment of Bank Debt**

$$\text{PHB}_{it} = h_0 + h_1 \text{DER}_{it} + h_2 \text{TREN}_{it} + h_3 \text{PHB}_{it-1} + U_8 \quad (19)$$

Expected parameter mark: $h_1, h_2, h_3 > 0$

20. **Payment of Loans of Financing Leases**

$$\text{PHSP}_{it} = i_0 + i_1 \text{DER}_{it} + i_2 \text{PHSP}_{it-1} + U_9 \quad (20)$$

Expected parameter mark: $i_1, i_2 < 0$

21. **Repayment of Related Parties' Payables**

$$\text{PHPB}_{it} = j_0 + j_1 \text{DER}_{it-1} + j_2 \text{TREN}_{it-1} + j_3 \text{PHPB}_{it} + U_{10} \quad (21)$$

Expected parameter mark: $j_1, j_2, j_3 < 0$

22. **Prinsipal Payment**

$$\text{PP} = \text{PHB} + \text{PHSP} + \text{PHPB} \quad (22)$$

23. **Debt Service Coverage Ratio**

$$\text{DSCR} = \text{EBITDA} / (\text{BB} + \text{PP}) \quad (23)$$

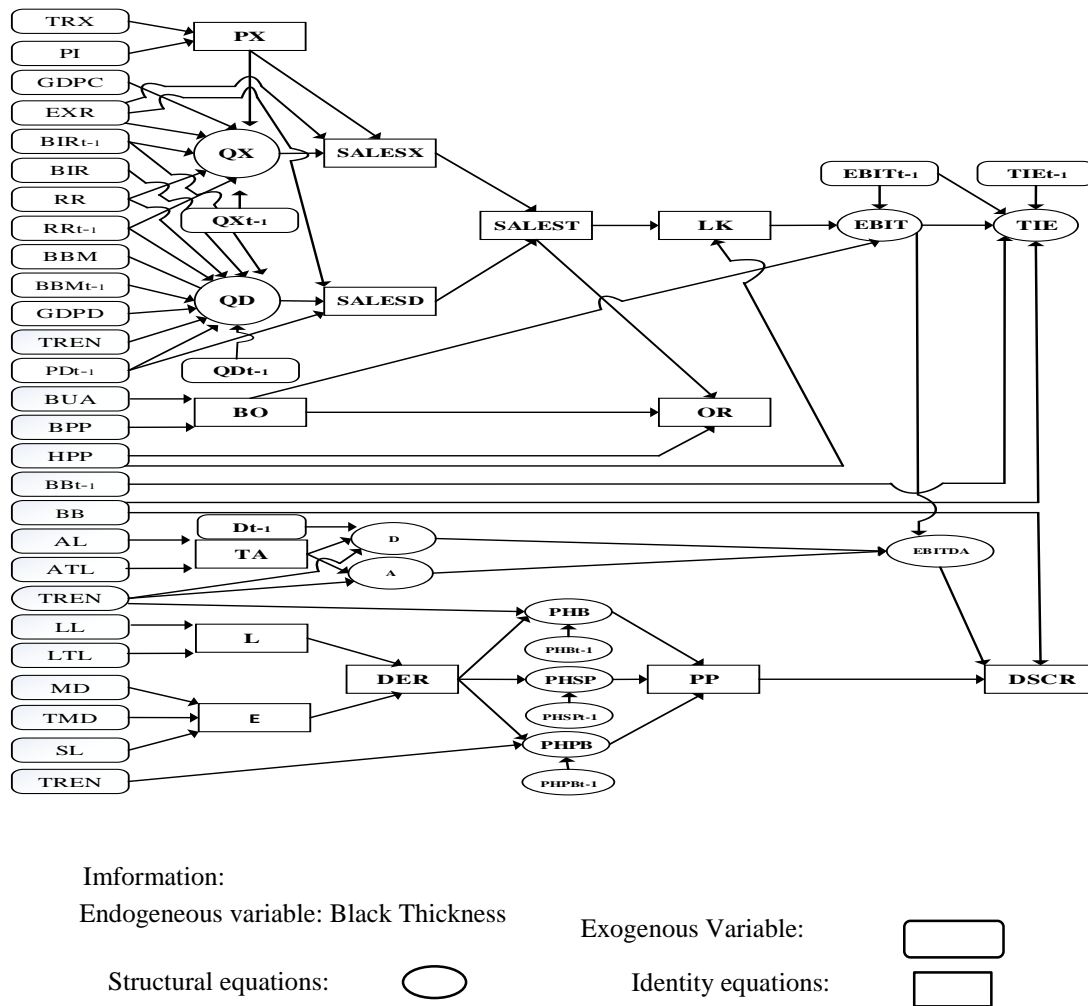


Figure 5. Interrelationship diagram among variables in the Coal Financial Flexibility Model

A list of endogenous and exogenous variables used in the research model is presented in Table 1 and Table 2.

Table 1. List of endogenous variables used in the model

No	Endogenous variables	Internal/External	Unit
1	Coal export price for the it year (PX_{it})	External	USD/Ton
2	Total sales of coal exports the it year (QX_{it})	Internal	Million Ton
3	Total sales of coal export the it year before (QX_{it-1})	Internal	Million Ton
4	Export coal sales X ($SALESX$)	Internal	Million Rp
5	Total sales of domestic coal the it year (QD_{it})	Internal	Million Ton
6	Total sales of domestic coal the it year before (QD_{it-1})	Internal	Million Ton
7	Domestic coal sales D ($SALESD$)	Internal	Million Rp
8	Total sales of X + D coal ($SALEST$)	Internal	Million Rp
9	Operational expenses (BO)	Internal	Million Rp
10	Operating ratio (OR)	Internal	Ratio
11	Gross profit (LK)	Internal	Million Rp
12	Earning before interest and tax the it year ($EBIT_{it}$)	Internal	Million Rp
13	Earning before interest and tax the it year before ($EBIT_{it-1}$)	Internal	Million Rp
14	Time interest earned the it year (TIE_{it})	Internal	Ratio
15	Time interest earned the it year before (TIE_{it-1})	Internal	Ratio
16	Total asset (TA)	Internal	Million Rp
17	Depreciation the it year (D_{it})	Internal	Million Rp
18	Depreciation the it year before (D_{it-1})	Internal	Million Rp
19	Amortization the it year (D_{it})	Internal	Million Rp
20	Earning before interest, tax, depreciation, and amortization the it year ($EBITDA_{it}$)	Internal	Million Rp
21	Liabilities (L)	Internal	Million Rp
22	Equity (E)	Internal	Million Rp
23	Debt to equity the it year (DER_{it})	Internal	Ratio
24	Payment of bank debt the it year (PHB_{it})	Internal	Million Rp
25	Payment of bank debt the it year before (PHB_{it-1})	Internal	Million Rp
26	Payment of finance lease payable the it year ($PHSP_{it}$)	Internal	Million Rp
27	Payment of finance lease payable the it year before ($PHSP_{it-1}$)	Internal	Million Rp
28	Repayment of related parties' debt the it year ($PHPB_{it}$)	Internal	Million Rp
29	Repayment of related parties' debt the it year before ($PHPB_{it-1}$)	Internal	Million Rp
30	Principal payment (PP)	Internal	Million Rp
31	Debt service coverage ratio ($DSCR$)	Internal	Ratio

Table 2. List of exogenous variables used in the model

No	Endogenous variables	Internal/External	Unit
1.	Export sales tax the it year (TRX_{it})	External	%
2.	International coal prices (PI)	External	USD/Ton
3.	Domestic coal price the it year before (PD_{it-1})	External	USD/Ton
4.	China's gross domestic product the it year ($GDPC_{it}$)	External	Rp/Year (Million)
5.	Exchange rate the it year (EXR_{it})	External	USD/Rp
6.	Interest rate bank Indonesia the it year (BIR_{it})	External	%
7.	Interest rate bank Indonesia the it year before (BIR_{it-1})	External	%
8.	Royalti batubara the it year (RR_{it})	External	Million Rp
9.	Royalti batubara the it year before (RR_{it-1})	External	Million Rp
10.	Prices of fuel oil the it year (BBM_{it})	External	Rp/Liter
11.	Prices of fuel oil the it year before (BBM_{it-1})	External	Rp/Liter
12.	Indonesias gross domestic product the it year ($GDPD_{it}$)	External	Rp/Year (Million)
13.	General and administrative expenses (BUA)	Internal	Million Rp
14.	Sales and marketing expenses (BPP)	Internal	Million Rp
15.	Cost of production (HPP)	Internal	Million Rp
16.	Interest expense the it year (BB_{it})	Internal	Million Rp
17.	Interest expense the it year before (BB_{it-1})	Internal	Million Rp
18.	Current assets (AL)	Internal	Million Rp
19.	Non-current assets (ATL)	Internal	Million Rp
20.	Current liabilities (LL)	Internal	Million Rp
21.	Non-current liabilities (LTL)	Internal	Million Rp
22.	Paid-up capital (MD)	Internal	Million Rp
23.	Additional paid-in capital (TMD)	Internal	Million Rp
24.	Retain earning (SL)	Internal	Million Rp

The financial flexibility model of coal companies was estimated using Statistical Analysis System/Econometric Time Series (SAS/ETS) software, with the following stages:

1. Any structural equations in the model need to be identified before the phase of parameter estimation. The result of model identification is *Over Identified* and the model was estimated using Two Stage Least Squares (2SLS) method.
2. Before the impact of external and internal factors simulation phase, the model was validated using Theil's Inequality Coefficient (U-Theil) criterion.

The external factors impact simulated scenarios (China's gross domestic product, international coal price, and rupiah exchange rate against USD) and internal factors (cost of production) on the financial flexibility of the coal company are:

- S1: China's gross domestic product fell 2%, the rupiah against the USD depreciated 2%, and the cost of production decreased by 5%.

S2: International coal prices fell 2%, rupiah exchange rate against USD depreciated 2%, and cost of goods production decreased 5%.

RESULT AND DISCUSSION

Financial Flexibility of Coal Company

The financial flexibility of coal mining is assessed using the Debt Service Coverage Ratio (DSCR) presented in Table 3. If the DSCR value > 1.20 means the company has financial flexibility and $DSCR < 1.20$ means the company does not have financial flexibility. Table 3 shows the average value of DSCR coal companies with financial flexibility and non financial flexibility. There are four companies with financial flexibility ($DSCR > 1.20$) ie PT Adaro Energy Tbk (ADRO), PT Tambang Bukit Asam Tbk (PTBA), PT Indo Tambang Raya Tbk (ITMG) and PT Bayan Resources Tbk (BYAN) with an average DSCR of 1.85, 3.53, 5.01, and 1.22 respectively. Meanwhile, PT Bumi Resources Tbk, PT Delta Dunia Propindo Tbk (DOID), PT Petrosea Tbk (PTRO) and PT Golden Energy Mines Tbk (GEMS) have no financial flexibility ($DSCR < 1.20$) DSCR average of 0.63, 0.50, 1.17, and -1.03, respectively.

Table 3. Financial flexibility of coal companies in 2011-2015

Company		DSCR					Average
No	Code	2011	2012	2013	2014	2015	
1	ADRO	2.94	3.35	1.07	0.88	1.00	1.85
2	BUMI	0.62	1.52	0.29	0.08	-	0.63
3	PTBA	5.03	4.46	3.14	3.10	1.91	3.53
4	ITMG	7.27	6.30	3.98	5.37	2.13	5.01
5	BYAN	3.23	0.37	1.15	0.25	1.13	1.22
6	DOID	-0.13	-0.11	1.03	0.78	0.92	0.50
7	PTRO	2.09	2.21	0.44	1.03	0.06	1.17
8	GEMS	1.14	-5.18	1.74	1.62	-4.45	-1.03

Source: Indonesia stock exchange (2017)

The decrease in the DSCR of coal firms is caused by external factors, China's economic downturn and the increasing campaign in clean and environmentally friendly energy by many countries in the world. The external factors will reduce coal global demand which then also reduce the price of global coal. The decline in global coal demand and prices caused a decline in the value of coal exports from listed companies, which led to a decrease in overall revenue. A decrease in revenues causes the value of the company's EBITDA to decline, thus having a direct impact on financial flexibility.

Internal factors that caused DSCR generally decline is the value of some DSCR companies below 1.20. The companies have an average debt to asset ratio larger than other coal companies. This result is in accordance with Arslan et al. (2010), said that leverage is an important component of financial flexibility. Gamba and Triantis (2007) said that the financial flexibility value is depending on the cost of external funding, leverage. Hocmuth (2010) said that companies which use low leverage funds have the capability of financial flexibility. From the discussion can be concluded that companies that have low debt have a higher financial flexibility than similar companies who have higher debt.

Estimated Model of Financial Company's Financial Flexibility

The econometric model of coal firm's financial flexibility in the study consist of 23 equations, 10 behavioral equations and 13 identity equations. The model has gone through several stages of model respecification. In general, all explanatory variables incorporated into behavioral equations have a compatible sign with expectations, especially in terms of economic theory. The statistical criteria in evaluating the model estimation results is quite convincing. The behavioral equation that has the greatest coefficient determination (R^2) is found in the earning before interest and tax equation of 0.99 and the smallest value is in the equity payout equation of 0.07.

Results of Validation of Financial Company's Financial Flexibility Model

The result of coal company's financial flexibility validation model shows that 69,5% of variables have U-Theil value below 50% and 30.5% value above 50%, indicating that during observation period from 2011 to 2015, the predicted value of endogen variable is good enough to be used for simulation model.

Impact of External and Internal Factors on the Financial Flexibility of Coal Companies

The alternative simulative result of external and internal factors impact on the performance and financial flexibility of coal companies are presented in Table 4.

Table 4. Impact of external and internal factors on financial flexibility of coal firms

Endogen variables	Unit	Basic value	Impact of simulation scenario	
			S1	
				(%)
			S1	S2
PX	USD/Ton	82.08	0.00	-2.00
QX	Million	10.46		
	Ton		4.09	1.78
SALESX	Million Rp	10,091,088.00	6.16	1.73
QD	Million	4.77		
	Ton		0.00	0.00
SALESD	Million Rp	4,408,965.00	2.00	2.00
SALEST	Million Rp	14,500,052.00	4.89	1.81
BO	Million Rp	1,558,094.00	0.00	0.00
OR	Ratio	0.91	-9.44	-6.38
LK	Million	1,688,942.00		
	Rp		79.92	53.50
EBIT	Million	37,202.80		
	Rp		3,752.68	2,512.88
TIE	Ratio	106.40	1.50	0.85
TA	Million	26,286,733.00		
	Rp		0.00	0.00
D	Million	861,274.00		
	Rp		0.00	0.00
A	Million	414,152.00		
	Rp		0.00	0.00

EBITDA	Million	2,220,431.00		
	Rp		33.80	22.73
L	Million	17,639,500.00		
	Rp		0.00	0.00
E	Million	8,179,057.00		
	Rp		0.00	0.00
DER	Ratio	1.84	0.00	0.00
PHB	Million	1,390,439.00		
	Rp		0.00	0.00
PHSP	Million	439,902.00		
	Rp		0.00	0.00
PHPB	Million	290,404.00		
	Rp		0.00	0.00
PP	Million	2,120,745.00		
	Rp		0.00	0.00
DSCR	Ratio	1.06	43.51 (1.51)	28.62 (1.36)

Table 4 shows if China's gross domestic product decreased by 2%, the exchange rate of rupiah to USD also depreciated by 2%. So, the company would anticipated by lowering the production cost by 5% which would affected the company's financial flexibility by 43.51% (*debt service coverage ratio of 1.51*). If the international coal's price decreased by 2% and the exchange rate of rupiah to USD depreciated by 2%, the company would anticipated by lowering the production cost by 5%. It would increased the financial flexibility of coal companies by 28.62% (*debt service coverage ratio of 1.36*).

MANAGERIAL IMPLICATIONS

To increase the financial flexibility of coal companies under (1) China's gross domestic product declines and the exchange rate of rupiah against USD depreciates, or (2) the price of coal in the international market falls and the rupiah exchange rate against USD depreciates, it is suggested to lower the production cost by doing efficiency of the company.

CONCLUSION

Based on the results in the study, it can be concluded as follows:

1. There are four companies with financial flexibility ($DSCR > 1.20$) from the eight coal companies studied in the 2011-2015 range, PT Adaro Energy Tbk (ADRO), PT Tambang Bukit Asam Tbk (PTBA), PT Indo Tambang Raya Tbk (ITMG) and PT Bayan Resources Tbk (BYAN) with an average DSCR of 1.85, 3.53, 5.01, and 1.22 respectively. Meanwhile, PT Bumi Resources Tbk, PT Delta Dunia Propindo Tbk (DOID), PT Petrosea Tbk (PTRO) and PT Golden Energy Mines Tbk (GEMS) have no financial flexibility ($DSCR < 1.20$) DSCR average of 0.63, 0.50, 1.17, and -1.03, respectively.
2. The impact of external and internal factors on the financial flexibility of coal companies, as follows:

- a. If China's gross domestic product decreased by 2%, the exchange rate of rupiah to USD also depreciated by 2%. So, the company would anticipated by lowering the production cost by 5% which would affected the company's financial flexibility by 43.51% (*debt service coverage ratio of 1.51*).
- b. If the international coal's price decreased by 2% and the exchange rate of rupiah to USD depreciated by 2%, the company would anticipated by lowering the production cost by 5%. It would increased the financial flexibility of coal companies by 28.62% (*debt service coverage ratio of 1.36*).

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