ATLANTIS PRESS
Advances in Economics, Business and Management Research, volume 160
Proceedings of the International Conference on Business and Management Research (ICBMR 2020)

The Impact of Coal Contract of Work (CCoW) Amendment on Mining Companies' Financial Performance:
A Case Study of Indonesian Mining Companies

Aris Winarno Raharjo[1] Rofikoh Rokhim[1,*]

[1] *Magister Management Program, Faculty of Economics and Business, Universitas Indonesia*
[*] *Corresponding author. Email: rofikoh.rokhim@ui.ac.id*

ABSTRACT
The Government of Indonesia issued Law No. 4 of 2009 concerning Mineral and Coal Mining (*Undang-Undang Nomor 4 Tahun 2009 tentang Pertambangan Mineral dan Batubara - UU Minerba*) on 12 January 2009. This new mining law is to overrule the Law No. 11 of 1967 concerning Basic Provisions on Mining which was considered no longer compatible with the development of mining practices, both domestically or internationally. Article No. 169 of the new law cites that any existing Coal Contract of Work (CCoW) has to be in conformity with the new mining regulation within one year after *UU Minerba* is released. Accordingly, the Indonesian Government then called Indonesian coal mining companies operating under CCoW concession to amend their CCoW. At the beginning, the coal mining industry was not in favor of the CCoW amendment because it would change their underlying regulations for mining operations. It impacts their CCoW in 6 strategic issues: 1st. License for mining operation, 2nd. Domestic processing obligation, 3rd. Domestic purchase obligation for material and services, 4th. Divestment obligation, 5th. Size of area concession, 6th. State revenue. The CCoW amendment can create adverse impacts on Indonesian coal mining companies such as losing some privileges, damaging financial performance and creating uncertainty to their return to long investment. Therefore, presumption in the coal mining industry is that amendment CCoW has an unfavourable impact on their financial performance. These circumstances have been dragging the renegotiation of CCoW amendment since 2019 until end of 2017 and just enacted effectively since 1st January 2018. This research is to determine whether CCoW amendment has an unfavourable impact on Indonesian coal mining companies' financial performance.

Keywords: *coal contract of work amendment, financial performance, coal mining companies, production cost, companies' profitability, 6 strategic issues.*

1. INTRODUCTION

The 1945 State Constitution of the Republic of Indonesia, section XIV, National Economy and Social Welfare article 33, paragraph 3, states that "*the land and the waters as well as the natural riches therein are to be controlled by the state to be exploited to the greatest benefit of the people*". The constitution dictates the government to control natural resources and regulate the exploitation to the best benefit of Indonesian people. Since Independence Day, there have been several mining laws issued. Firstly, government regulations in lieu of laws No. 37 of 1960 concerning Mining, dated 14 October 1960. It was then superseded with the second mining law No. 11 of 1967 concerning Basic Provisions on Mining, dated 2 December 1967. After 33 years since the second mining law, the Indonesian Government issued new mining law No. 4 of 2009 concerning Mineral and Coal Mining (*UU Minerba*) on 12 January 2009. The new mining law is to uphold Indonesian mining operations compatible with the latest global mining practices and increase benefit from Indonesia mining industry. The new mining law outlines detailed regulations and basis for the authority to govern the mining industry. Following the issuance of *UU Minerba*, any mineral and coal mining contract between government and private companies is required to be in conformity with the new *UU Minerba*.

Indonesian coal mining companies are established up to twenty years, obtain coal concession and operate under Coal Contract of Work (CCoW). There are 6 strategic issues involved in amendment of the CCoW, consisting of: 1st. license for mining operation, to convert its mining license from CCoW to special mining permit; 2nd domestic processing obligation, to establish in country coal processing facilities; 3rd domestic purchase obligation for material and services, to maximise local procurement; 4th divestment obligation, to divest ownership to national company at certain percentage after several years of operation; 5th size of area concession, to reduce area concession to 15k ha per coal concession; 6th state revenue, to follow prevailing tax law and regulations. CCoW is a fundamental change on underlying regulation for coal mining companies to operate in Indonesia. Indonesian coal mining companies' perceive that CCoW amendment has an adverse impact on their financial performance and create uncertainty toward long term investment in the coal mining industry. Therefore, CCoW amendment has not been not in favour for coal mining companies since the issuance of new *UU Minerba* in 2009. It took 9 years for the government to get Indonesian coal mining companies to accept the amendment effective from 1st January 2018.

CCoW amendment has an impact on coal mining companies' financial performance because the change in 6 strategic issues increase production and operation costs. Additional costs incurred due to CCoW amendment are considered as regulation costs for compliance with the new UU Minerba. This study is to provide empirical evidence whether a change in government regulation (CCoW amendment) has an unfavorable impact toward coal mining companies' financial performance. To understand the real impact of CCoW amendment, financial performance of coal mining companies are compared for the period before and after CCoW amendment is fully applied to all CCoW companies. Correlation between the regulation costs and coal mining companies' financial performance is also analyzed to determine whether new regulations always put financial performance at risk to decline.

2. LITERATURE REVIEW

2.1. Working Capital

Working capital is related to a company's short-term assets, such as inventory, and its short-term liabilities, such as money owed to suppliers. The short-term asset and liabilities cover almost half the company's total asset. Managing the company's working capital is a day-to-day activity that ensures that the company has sufficient resources to continue its operations and avoid costly interruptions [1]. The major components of working capital are accounts receivable, inventories, cash and cash equivalents and accounts payable. Meanwhile, sources of working capital are proceeds from shares capital, loan from financial institutions and reinvesting profit from operation. Working capital is calculated on the basis of the balance sheet prepared on a specific date which represents company investment in current assets (gross working capital) and refers to difference between current assets and current liabilities (net working capital). Gross working capital includes cash & bank balance, short term investment, trade receivables, advances and inventory, whilst net working capital shows the amount of current asset after all current liabilities paid off.

Companies have to manage working capital accounts to achieve a balance between costs and benefits. If a company has too little working capital, it puts the company in the risk of not being able to meet its third parties' obligations. On the other hand, too much working capital may tie up resources in unproductive assets and incur additional costs [2]. Financial performance indicators can determine how well a company uses assets from its primary business to generate revenue. A company with high financial performance suggests effective and efficient management in making use of the company's resources. Working capital management is critical because it has a significant impact on a company's profitability and liquidity position and consequently to shareholder's wealth. For profitability analysis, there are 4 useful measures to use: 1. The rate of return on assets (ROA); 2. The rate of return on equity (ROE); 3. Operating profit margin; and 4. net income. The rate of cash ratio, the rate of quick ratio, the rate of current ratio and the rate of inventory turnover ratio are common measures for liquidity analysis. This study focuses on the profitability of coal mining companies before and after amendment using profitability for analysis.

2.2. Correlation Analysis between Environmental Cost and Business Performance

China has become stringent its environmental compliance toward energy conservation and emission reduction. In recent years, China's carbon trading has been introduced to the industry. Thermal power enterprises have been known by global environmentalists as the main producer of CO2 pollutants. However, thermal power generations are also key players to supply cheap energy in China to support industrial development. This China energy structure adjustment has created huge pressure on thermal power generation because they have to bear significant additional environmental cost for compliance against new government regulations in energy conservation and emission reduction. A research conducted by Song *et al.* [3] studied the impact of additional environmental costs as a result of new environmental regulation introduced

by the Chinese Government to thermal power generation business. To analyze correlation between the environmental cost and thermal power generation enterprise business performance, a research method of multiple linear regression analysis was developed and identify variables relevant for the model which consist of dependent variables, independent/explanatory variables and control variables.

Using Index design and correlation analysis model construction, this research developed two analysis empirical models to determine the relationship between environmental cost and both Rate of Return on Common Stockholders' Equity (ROE) and Increasing Rate of Sales Income (ORIR).

$$ROE = \alpha + \beta 1EC + \beta 2ECQ + \beta 3DEBT + \beta 4ATAR + \beta 5SIZE + \beta 6AGE + \varepsilon \quad (1)$$

$$ORIR = \alpha + \beta 1EC + \beta 2ECQ + \beta 3DEBT + \beta 4ATAR + \beta 5SIZE + \beta 6AGE + \varepsilon \quad (2)$$

Where α is model intercept term, β is the regression coefficient of the model, ε is the stochastic error.

Song *et al.* [3] have conducted a regression test to verify their two research hypothesis on impact of environmental cost toward business performance which are:

Hypothesis 1.1 (H1.1). The environmental cost of the enterprise is positively related to the profitability of the enterprise.

Hypothesis 1.2 (H1.2). The environmental cost of the enterprise is positively related to the development ability of the enterprise.

Table 1. Summary of Model Variables

Variable Property	Variable Interpretation Content	Variable Name	Variable Symbol
Explained variable	Business Performance	Rate of Return on Common Stockholders' Equity	ROE
		Sales Growth Rate	ORIR
Explanatory variable	Environmental Costs	Environmental Costs	EC
		Numerical Index Environmental Costs Disclosure Quality Index	ECQ
Control Variable	Capital structure	Asset-liability Ratio	DEBT
	Operational capacity	Total Asset Turnover	ATAR
	Enterprise Characteristics	Firm Size	SIZE
		Firm Age	AGE

The research concludes that there is a significant positive correlation between the level of environmental cost and business performance, as well as the profitability and development ability of the enterprise. The high environmental cost expenditure level of power generation enterprises stimulates enterprises to improve their technical level and management ability [3].

3. RESEARCH METHODOLOGY

This research methodology is designed to compare Indonesian coal mining companies' financial performance for the years of 2015 to 2019 or 3 years before and 2 years after amendment CCoW effectively accepted on 1st January 2018. Two methodologies are used for data analysis. The first method is a series data analysis where financial data of Coal Company as the research sample compared over the period of research and compared against similar companies in the coal mining business. Second, using the same approach from previous research conducted by Song *et al.* who are studying the impact of new environmental regulations introduced by China Government to thermal power generation enterprises' business performance. The research studied the correlation of new environmental cost incurred and business performance [3]. CCoW amendment is expected to cause additional cost for coal mining companies to comply with the new regulation. Therefore, the research methodology of Chinese thermal power generation enterprise case is fit to analyze impact amendment CCoW to coal mining companies' financial performance.

Thirteen Indonesian listed coal companies in Indonesia Stock Exchange (IDX) are selected as research samples for data analysis. Their financial performance for the period of 2015 to 2019 are taken for research analysis using time series data analysis and correlation analysis between regulation cost and financial performance of the companies. Research data is gathered from an annual report of 13 listed coal companies published in their respective websites.

3.1. Time Series Analysis

This research method basically conducts a comparison of a series of certain financial performance indicators of a research sample over a series of years, 2015 to 2019. Further, the analysis is extended by comparing the financial performance against other coal mining companies within the period of observation. To provide a basis for fair comparison of financial performance, 6 profitability indicators are selected which consist of: 1. Net revenue, 2. Net income, 3. Gross income margin, 4. Operating income margin, 5. Net income margin 6. Return on Assets (ROA). Each

Table 2. Summary of Model Variables

Variable Property	Variable Interpretation Content	Variable Name	Variable Symbol
Explained variable	Business Performance	Earnings before Interest Tax Depreciation & Amortization	EBITDA
Explanatory variable	Regulation Costs	Cash Cost per Sales Volume	CC
Control Variable	Capital structure	Asset-liability Ratio	DEBT
	Operational capacity	Total Asset Turnover	ATAR
	Enterprise Characteristics	Firm Size	SIZE
		Firm Age	AGE

profitability indicator of the 13 research samples are compared and analyzed to determine how CCoW amendment impacts their financial statement for the 5 year period.

3.2. Data Correlation Analysis

CCoW amendment is expected to change how coal mining companies run their business through the 6 strategic issues and therefore, additional cost, regulation cost is to be incurred by coal mining companies to be in compliance with the new *UU Minerba*. A regression model is developed to examine the correlation between regulation costs with the research samples' financial performance for the period of 2015 to 2016 [4]:

$$EBITDA = \alpha + \beta 1CC + \beta 2DEBT + \beta 3ATAR + \beta 4SIZE + \beta 5AGE + \varepsilon \quad (3)$$

The variables in the regression model above represent components which have correlation to Indonesian listed coal mining companies' financial performance:

EBITDA	:	Earnings before interest tax depreciation and amortization
CC	:	Total cost excludes interest, depreciation and amortization
DEBT	:	Total liabilities at end/ total asset at end x 100%
ATAR	:	Net income/average total assets
SIZE	:	Ln (total asset of companies)
AGE	:	Companies listing year – reporting year+1

The hypothesis of this research is about the impact of CCoW amendment on Indonesian listed coal mining companies' financial performance. CCoW amendment is presumed to have an unfavorable impact on Indonesian coal mining companies' financial performance.

Hypothesis 0 (H_0). There is a negative correlation between CCoW amendment and Indonesian coal mining companies' financial performance.

4. RESULTS

4.1. Time Series Analysis

The revenue of the 12 coal mining companies increased in 2018 and 2019. 5 coal mining companies have had positive revenue trends from 2017 to 2019. While 7 coal mining companies had lower revenue in 2019 than 2018. The variation in revenue trend since 2017 to 2019 was associated with change in sales volume. The revenue of 7 coal mining companies was declining in 2019 due to lower coal average sales price during 2019. The coal market index has been under pressure until 2020 as a result of weak coal demand and over coal supply forecast in the global coal market. CCoW amendment does not have any impact on revenue to Indonesian coal mining companies for the period 2018 to 2019. The coal mining companies increased sales volume to offset the turn of average coal sales price in the year.

One of the critical profitability indicators for the companies' financial performance is net income from one calendar year of the company operation. Net profit is derived from net income after all costs of revenue, general administration and marketing expenses. Those expenses are directly impacted by CCoW amendment when coal companies have to follow tax prevailing law (State revenue strategic issue). The net income of 11 coal mining companies were at positive figures and only 2 coal mining companies were at negative net income since the CCoW amendment was applied in January 2018. However, 6 coal mining companies have been experiencing declining net income since 2017 to 2019. The requirement to follow prevailing tax law has an impact on the coal mining companies' bottom line or profit margin because 10% VAT over any purchase of goods and services is a cost for the companies. However, this is not the only factor to drive lower net income over the period after CCoW amendment. Furthermore, 12 coal mining companies delivered lower net income in 2019 than the 2018 outcome. This was mainly affected by declining average selling prices since 2018 until 2019.

3 coal mining companies were at positive gross profit in the year 2018 and 2019, but the gross profit margin was declining during the last 2 year. It shows that production costs increased relatively higher than the increase in revenue for the time period. It is noted that production cost per ton in 2018 is higher than 2017, whilst production cost in 2019 was lower than 2018. Implying that 6th strategic issue, to follow prevailing tax law (increase state revenue) has caused additional cost to coal mining companies, but percentage change of

Table 3. Descriptive Statistic Analysis

Variable	N	Minimum	Maximum	Mean	Std. Deviation
EBITDA	65	-362.00	422.00	19.49	130.82
CC	65	-2,346.63	-3.52	-602.41	675.71
DEBT	65	8.47%	97.15%	39.29%	21.58%
ATAR	65	-28.41%	56.71%	13.26%	17.18%
SIZE	65	0.20	9.88	6.75	2.26
AGE	65	6.00	29.00	12.46	5.58
Valid N (list wise)	65				

production per ton from 2017 to 2018 also indicated that CCoW amendment was not the only reason for increase in production cost. Further, the production costs of 11 coal mining companies were lower in 2019 than 2018, meaning the coal companies have made adjustments in their production cost structure as response to additional cost due to CCoW amendment. Lower gross margin in 2019 was mainly attributed to lower average coal selling price.

Operating profit margin indicates profit after sales revenue minus cost of goods sold (production cost) and operating expenses. 12 Indonesian coal mining companies were in a declining trend of operating profit margin from 1st January 2018 to the end 2019 and 6 of them were at the same percentage of net operating profit margin in 2017 and 2018. The percentage of operating profit margin from 2017 to 2018 was declining relatively slightly,by less than 5%, while in 2019 to 2018 it was declining at a higher percentage ton. Further, some coal companies have lower cost of revenue and cost production per-ton in the period after amendment CCoW was in place. It implied that Indonesian coal mining companies have managed to reduce administrative and marketing cost as a response to potential increase over operating expenses as a result of the change in privileges obtained in 6 strategic issues prior to CCoW amendment, such as nail down tax regime (against following prevailing tax law) and fixed rate of the government duties or fees.

Net profit margin measures the percentage of each sales dollar that generates profit [2]. Similar to the trend in net profit for the last 5 years, net profit margin also shows a declining trend from 2017 to 2018. The requirement to follow prevailing tax law has driven higher production and operation costs to the 13 Indonesian listed coal mining companies for the year 2018 and 2019. However, it is not the only factor because changes in percentage profit margin vary from one company to another, and from 2018 to 2019.

Return on asset measures a company's ability to utilize assets to earn income. The total assets of 13 coal mining companies increased year to year in 2017 to 2019, meaning that the coal companies continued to invest in assets in the last 5 year. The coal mining industry is a capital intensive business which requires capital investment in assets to support growth and generate more revenue and achieve targeted bottom line. It is in-line growth in total assets with increase in production quantity also sales volume increase. Obligation to maximize purchase of goods and services domestically (4th strategic issue) give benefit to companies to purchase materials or services locally at lower price than imported goods. The ROA percentage of most 13 coal mining companies were declining between 2017, 2018 and 2019. The decline refers to a higher number of total assets and lower net income in that period.

4.2. Correlation Data Analysis

Based on sample data selection, there are 13 Indonesian listed coal mining companies selected as samples for this research. 390 research data are collected from the sample for the period from 2015 to 2019.

4.2.1 Descriptive Statistic

The means of absolute value EBITDA is 19.49 with minimum and maximum values being -362.00 and 422. The negative value indicates that delta EBITDA is declining compared to the previous year. The minimum and maximum EBITDA are -362.00 and 22.00. The means of CC variable is -620.41. The minimum CC value is -2,346.6 while the maximum CC is -3.52, lower CC has meaning more cost incurred by coal mining companies. The mean DEBT 39.29%, while the minimum and maximum DEBT are 8.47% and 97.15%. ATAR represents the ratio of net operating income against total assets with the mean of 13.26%. This variable has a minimum value of -28.41% and maximum value of 56.71. The mean SIZE is 6.75. The minimum value of SIZE is 0.2 while the maximum SIZE is 9.9 in 2019. The minimum AGE is 6.00 whilst the maximum AGE is 29.00. The mean AGE is 12.46.

4.2.2 Correlation Data Analysis and Regression

Table 4. shows that the test model F is 0.854 (sig=0.518[b]). Its significance is greater than 1% or p>1%, therefore it has not passed the significant test. It implies that the independent variable, CC and control variables, DEBT, ATAR, SIZE and AGE have no simultaneous effect on the dependent variable,

Table 4. Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-77.109	79.796		-.966	.338
	CC	.013	.034	.066	.376	.708
	DEBT	.826	.861	.136	.958	.342
	ATAR	1.963	1.074	.258	1.828	.073
	SIZE	4.055	10.489	.070	.387	.700
	AGE	1.482	3.087	.063	.480	.633
R Square = 0.67 F=0.854 (Sig.0.518)						

EBITDA. R Square of 0.67 indicates the goodness fit is considered acceptable. The variation of the EBITDA variable can be explained by CC, DEBT, ATAR, SIZE and AGE variables at 67%, while the remaining 23% is because of other variables not tested in this research.

The correlations between CC and EBITDA did not pass the significance test because the significance value is 0.338 or > 1%. There is no significant correlation between CC and EBITDA. The coefficient of CC is -0.996, indicating that both variables have negative correlation, increasing in CC would impact in decreasing EBITDA, but it does not necessarily occur because the correlation is not significant. CCoW amendment is intended to increase state revenue by imposing prevailing tax law and tax benefits granted to Indonesian coal mining companies. As a result, the operation and production costs of coal mining companies have increased by 10% from payment of VAT input being no longer creditable. There were only 6 companies with lower EBITDA compared to 2017, but 11 companies had worse EBITDA in 2019 than 2018. Declining EBITDA in both years was at a varying percentage and more than 10%, so it was not impacted by CCoW amendment but other more significant factors of declining average coal sales price.

DEBT also has no significant correlation with EBITDA due to its significance value being 0.342 or >1%. The coefficient value is 0.958. DEBT has positive but not significant correlation with EBITDA. An increase in DEBT has positive correlation with an increase in EBITDA. It is because with more debt obtained, the companies can have more flexibility to manage the working capital and therefore support the companies to achieve better financial performance. Domestic obligation for local purchase, material and service reduce coal mining companies' exposure to foreign currencies liabilities and therefore improve current ratio.

Unlike the 2 other variables, ATAR has no significant correlation with EBITDA as its significance value at 0.073 or >1%. The Coefficient value is 1.828. ATAR has a positive correlation with EBITDA in which ATAR increases of 1% will increase EBITDA as much as 26%. The more efficient coal mining company in utilizing its assets to produce net income has a positive correlation to the coal mining company in achieving better EBITDA. With company efficiency, it allows the coal mining company to fulfill domestic obligations for coal processing and local purchase for goods and services, which will generate better net income and EBITDA at the end.

SIZE has no significant correlation with EBITDA as its significance value at 0.700 or >1%. The Coefficient value is 0.387. SIZE has positive correlation with EBITDA. It means that larger SIZE will deliver higher EBITDA. Size represents coal companies' Ln total assets in which a coal mining company with large assets has significant leverage to improve EBITDA. AGE has no significant correlation with EBITDA due to its significant value at 0.633 or >1%. The Coefficient value is 0.48. AGE has a positive but not significant correlation with EBITDA. The longest coal mining company listed in IDX has been for 29 years. However, the company has only delivered mediocre financial performance, much lower than the mean EBITDA in the last 5 years.

5. DISCUSSION

5.1. Time Series Analysis

From the trend analysis of Indonesian listed coal mining companies' financial performance, it can be concluded that CCoW amendment has an impact on the companies' financial performance but not that significant compared to the pressure of average selling price of coal in the global market. Overall, coal mining companies still show a positive bottom line and continue spending capital expenditure over 2 years after the CCoW amendment was effectively applied on 1st January 2018. In short, the impact of CCoW amendment is not clearly recognized since coal mining companies have been able to counter the negative impact of the new regulation by running their mining operation more efficiently and reducing unnecessary production and operation costs.

5.2. Correlation Data Analysis

The regression test result concludes that there is no negative correlation between regulation cost as a result of CCoW amendment and Indonesian coal mining companies' financial performance for the period of 2015 to 2019. Increase in regulation cost as result of CCoW amendment, represents higher cash cost of Indonesian coal mining companies has positive correlation with increase in the companies' financial performance, higher EBITDA since implementation of CCoW amendment in 1st January 2018. Therefore Hypothesis 0 (H_0) is not verified (or rejected). The result of this research reveals the opposite outcome compared to the research hypothesis in which CCoW amendment was hypothesized to have an unfavorable impact on the Indonesian coal mining companies' financial performance

6. CONCLUSION

CCoW Amendment had no unfavorable impact on the financial performance of Indonesian mining coal companies' financial performance since its implementation on 1st January 2018. It has encouraged coal mining companies to operate more efficiently and reduce unnecessary production or operation costs to maintain a positive bottom line. This empirical study shows that the EBITDA for the last 2 years continued increasing. The listed coal companies managed to offset the increment of cash cost with other corporate actions to achieve targeted annual business performance.

A majority of the listed coal mining companies selected as research samples continue showing positive EBITDA for the year 2018 to 2019. The declining EBITDA figure from 2017 to 2019 is mainly affected by the weakening average coal selling price in those years as a result of pressure from lower coal demand and excessive coal supply in the global coal market. It concludes that CCoW amendment has no significant impact on the Indonesian coal mining companies' declining financial performance.

REFERENCES

[1] S. A. Ross, R. W. Westerfield, and B. D. Jordan, Fundamental of Corporate Finance, 9th ed. New York, NY:McGraw-Hill, 2010

[2] D. G. Short, R. Libby, P. Libby, and M. A. Giulian, Financial Accounting Global Edition,7th ed. New York, NY: McGraw-Hill/Irwin, 2011.

[3] X. Song, X. Jiang, X. Zhang, J. Liu, "Analysis, Evaluation and Optimization Strategy of China Thermal Power Enterprises' Business Performance Considering Environmental Costs under the Background of Carbon Trading," Sustainability, MDPI, Open Access Journal, vo. 10, no. 6, pp. 1-27, 2018.

[4] D. M. Levine, D. F. Stephan, and K. A. Szabat, Statistics for Managers Using Microsoft E*xcel*. 8th ed. Harlow, England: Pearson, 2017