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Optimizing the Capital Structure of Coal Companies in Indonesia Towards the Implementation of Government Regulation No. 36 of 2023 concerning Foreign Exchange Proceeds from Exports

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Abstrak. This study examines the impact of Government Regulation No. 36 of 2023 on the financial structure of PT X, a coal mining company in Indonesia, and explores how the company can optimize its capital structure to adapt to the new regulation requiring exporters to deposit 30% of their export proceeds into a special account for a minimum of three months. The research uses a quantitative approach with financial modeling, supported by qualitative interviews with PT X's finance team and management. This research aims to analyze PT X's financial condition after implementing PP No. 36/2023 and to determine an optimal capital structure. The study uses a capital structure optimization method employing the Solver linear programming tool in Microsoft Excel. Its objective is to minimize the cost of capital while ensuring the company maintains a positive cash balance each month. The results indicate a significant shift in PT X's capital structure, with increased debt in 2023 due to the need for short-term financing to comply with the new regulation. The presence of bank loans will impact the company's capital structure, thus necessitating optimization. The results of this capital structure optimization indicate the percentage of funds PT X should obtain from loans versus the percentage from owner's equity. All financial ratios, specifically the current ratio, DER (Debt-to-Equity Ratio), and DSCR (Debt Service Coverage Ratio), showed improvement. However, the challenges to pure cash flow stability (cash ratio) were not entirely resolved.

Keywords: Keywords: Optimization of Capital Structure; foreign exchange from exports; Government Regulation No. 36

INTRODUCTION

The Government of Indonesia has issued a new regulation on the management of foreign exchange from natural resource exports. Government Regulation Number 36 of 2023, which is effective from August 1, 2023, replaces the previous regulation and requires exporters in the mining, plantation, forestry, and fisheries sectors to deposit at least 30% of their export value into a special account in the Indonesian financial system. This provision applies to any export transaction with a minimum value of USD 250,000.

PT. X is a coal mining company that has a mining business license located on the island of Sumatra. Every month, this company exports a large amount of coal. However, the existence of new rules requires PT. X to set aside 30% of funds from exports for 3 (three) months in banking. This makes the company's cash flow hampered and has the potential to disrupt the company's operational activities.

PT X has implemented PP No.36 since September 2023. According to the Financial Statements for the period of December 31, 2023, PT X has deposited funds in a special account (reksus) at one of the Banks (hereinafter referred to as Bank A) amounting to USD 1,936,896 or equivalent to 30% of the export value from October to December 2023. In the same period, PT X's net profit was below 30%, this was due to sales *growth* that was not as high as the previous year and the company's operating costs (COGS and SGA). With the existence of fund deposition rules related to PP No.36 and *insignificant growth sales*, PT X had to obtain

additional capital for operations by obtaining short-term facilities from Bank A where previously PT X did not have any short-term or long-term bank debts.

Significant changes in the capital structure of PT. X due to the implementation of Government Regulation Number 36 of 2023, has encouraged researchers to find out more about optimizing the company's capital structure. This study aims to analyze the financial condition of PT X after the policy is implemented and find optimal solutions in regulating the capital composition, so as to minimize capital costs and increase the company's value.

The financial impact of the implementation of PP No. 36 is actually not only felt by coal mining companies but also by all companies that export in the fields of mining, plantations, forestry, and fisheries. However, the researcher chose the coal mining business sector because based on data from Hafner & Luciani (2022), Indonesia is one of the top 5 (five) coal exporters in the world. In addition, based on data from the Central Statistics Agency (BPS) in 2023, exports in the mining sector are the second largest after the processing industry, followed by oil and gas, as well as agriculture, forestry and fisheries. So it can be said that among the 4 business fields that are required to be subject to Government Regulation No.36, exporters in the mining sector are the largest in number. Coal is also the largest export commodity in Indonesia in the mining sector.

This study aims to analyze the financial condition of PT X during the implementation of PP No.36 related to DHE SDA and how the optimization of capital structure can be carried out to overcome the financial impact arising from the policy. In this context, the research provides practical benefits to stakeholders, by providing consideration for financial management decision-making that is balanced between regulatory compliance and corporate financial stability. In addition, this research assists project leaders and top management in seeking capital structure optimization related to the implementation of PP No.36. From a theoretical perspective, this research contributes to understanding the sensitivity of coal companies to new government regulations and can be a reference for future research on corporate financial management that adapts to government regulations. The limitations of this study include the location of PT X as a coal mining company on the island of Sumatra, with the main focus on the company's financial management aspects related to the impact of PP No.36, and following the policies and procedures of coal mining and trade that apply in Indonesia.

RESEARCH METHODS

This study uses a quantitative approach with a financial model to analyze numerical data, supported by qualitative methods through interviews with PT X's finance and management teams. Projections include sales, COGS, SGA, receivables, accounts receivable, and other financial items. In addition, this study optimizes PT X's capital structure using linear programming with Solver in Microsoft Excel, with the aim of maximizing company value and minimizing capital costs. The research also included interviews to explore the company's internal strategies regarding changes in capital structure and funding alternatives. Primary data is obtained from interviews, while secondary data is collected from financial statements. This research is expected to contribute to the analysis of the company's finances in the face of government regulations and long-term financial projections.

ANALYSIS AND DISCUSSION

4.1 Analysis of PT X's Capital Structure from 2020 to 2022

PT X is a coal mining company that was established in 2005. PT X's Capital Structure in 2020 to 2022 is as follows:

Type of Capital	Year 2020		Year 2021		Year 2022	
	Nominal (USD)	%	Nominal (USD)	%	Nominal (USD)	%
Equity	(5.050.708)	-67,26%	11.403.432	100,00%	17.185.659	100,00%
Bank/Financial Institution Debt	-	0,00%	-	-	-	-
Debts of Related Parties	12.560.000	167,26%	-	-	-	-
Shareholder Debt	-	0,00%	-	-	-	-
Total	**7.509.292**	**100,00%**	**11.403.432**	**100,00%**	17.185.659	100,00%

Information:

Related party debt is a loan obtained from parties who have a special relationship with the company, namely a business group.

From the table above, this study uses 4 main components in the company's capital structure, namely equity, debts of other banks/financial institutions, debts of related parties, and debts to shareholders. The capital structure in 2020 was very unhealthy with negative equity and reliance on debt from related parties. The capital structure in 2021 became very strong as it was fully funded by equity. The company managed to get out of its dependence on the debts of related parties by paying off the debt. This is supported by an increase in sales of 204.68% from the previous year so that it can record a positive net profit at the end of 2021 significantly. In 2022, the capital structure was entirely funded by equity. Each year, the company's total capital has increased, driven by consistently growing annual sales, which in turn necessitates a larger capital base.

To be able to see the details of the equity component, below are the details of PT X's equity from 2020 to 2022 as follows:

Types of Equity	Year 2020		Year 2021		Year 2022	
	Nominal (USD)	%	Nominal (USD)	%	Nominal (USD)	%
Paid-up capital	2.062.683	40,84%	2.062.683	18,09%	2.062.683	12,00%
Retained profits	(7.091.098)	-140,40%	9.376.529	82,23%	15.170.783	88,28%
Other comprehensive losses	(22.293)	-0,44%	(35.780)	-0,31%	(47.807)	-0,28%
Total	**(5.050.708)**	**-100,00%**	**11.403.432**	**100,00%**	**17.185.659**	**100,00%**

Information:

Other comprehensive losses consist of remeasurement losses on after-tax employment compensation liabilities and exchange rate differences.

From the table above, it can be seen that PT X's equity in 2020 was recorded as minus, this is due to a deficit in retained earnings derived from the negative balance of retained earnings which amounted to USD -8,173,455 even though it had posted a positive profit of USD 1,082,357. In 2021, total equity has returned positive, caused by a significant increase

in current profit, which is USD 16,467,627. In 2021 and 2022, the proportion of retained earnings increased, reducing the percentage of paid-up capital. This illustrates that the company has been able to finance the company's funding, the majority of which comes from operating profits, so it can be said that the company's capital structure is getting healthier. In 2022, the company also managed to distribute dividends to shareholders of USD 27,000,000.

The company's liquidity condition from 2020 to 2022 can be described through the current ratio and cash ratio as follows:

Liquidity	2020	2021	2022
Current Ratio (%)	108,40%	121,94%	104,82%
Cash Ratio (%)	15,59%	52,01%	18,35%

From the table above, it can be seen that the company has shown good ability to pay its short-term obligations during the 2020 – 2022 period. The increase in the current ratio in 2021 is very positive, although there was a slight decrease in 2022, but it is still relatively safe although it cannot be said to be healthy because the current ratio is still below 200%. The company fulfills its short-term obligations not entirely from cash and the company's cash equivalent. The company most fulfilled its short-term obligations using cash and cash equivalents was in 2021, with a cash ratio of 52.01%.

The condition of the company's debt ratio from 2020 to 2022 can be described through the *debt to Equity Ratio* analysis as follows:

Solvency	2020	2021	2022
Debt to Equity Ratio (%)	-418,51%	157,19%	162,99%

The table above shows that in 2020 the company had negative equity, resulting in a negative ratio, which means that the company's total liabilities far exceed its total assets. This condition indicates a very high level of financial risk. The company is likely to have difficulty meeting its long-term obligations and is in an unstable financial position. In 2021, there was a drastic change to positive values. A DER of 157.19% means that for every USD 1 of equity, the company has USD 1.57 in debt. This shows that companies are funded more by debt compared to their own capital. This level of financial leverage is relatively high and can increase the company's financial risk. In 2022, the DER increased slightly to 162.99%. This means that for every USD 1 of equity, the company has USD 1.63 in debt. This increase shows that the level of financial leverage of companies has increased slightly compared to 2021. The company's financial risk also has the potential to increase slightly as the proportion of debt in funding becomes larger.

4.2 Analysis of PT X's Capital Structure from 2023 to 2024

After analyzing the company's capital structure from 2020 to 2022, which was the year before the existence of PP Regulation No. 36 related to exports. Below is an explanation of PT X's capital structure in 2023 and 2024 after the existence of Government Regulation No.36 related to exports, which is as follows:

Type of Capital	Year 2023		Year 2024	
	Nominal (USD)	%	Nominal (USD)	%
Equity	24.374.000	92,92%	37.555.229	95,71%
Bank/Financial Institution Debt	1.856.903	7,08%	1.684.147	4,29%
Debts of Related Parties	-	0,00%	-	0,00%
Shareholder Debt	-	0,00%	-	0,00%
Total	**26.230.903**	**100,00%**	**39.239.376**	**100,00%**

From the table above, it can be seen that there will be a change in the capital structure in 2023, namely an increase in the proportion of debt from zero in 2022 to 5.55%. In 2023 the capital structure is dominated by equities, followed by bank debt. Based on information from the company, the existence of Bank debt in 2023 is related to the existence of regulations from the government through Government Regulation No.36 related to exports, one of the financial institutions that facilitates special financing for DHE SDA is banking. The advantage of using facilities from banking is that the Bank also reports on fund traffic from exports to BI so that it will help companies to make it easier to report their obligations to deposit funds at SIMoDIS (Instant Integrated Foreign Exchange Monitoring System) of Bank Indonesia. By 2024 the capital structure will be heavily dominated by equities. The company has managed to reduce its dependence on debt, especially by paying off all debts to related parties and shareholders. Bank/Financial institution debt also decreased.

To be able to see the details of the equity component, below are the details of PT X's equity from 2023 to 2024 as follows:

Types of Equity	Year 2023		Year 2024	
	Nominal (USD)	%	Nominal (USD)	%
Paid-up capital	2.062.683	8,46%	2.062.683	5,49%
Retained profits	22.379.346	91,82%	35.540.331	94,63%
Other comprehensive losses	(68.089)	-0,28%	(47.785)	-0,13%
Total	**24.373.940**	**100,00%**	**37.555.229**	**100,00%**

From the table above, it can be seen that the equity structure for 2023 to 2024 is dominated by retained earnings, which shows that the company has generated significant profits. The company is also able to distribute dividends of USD 14,000,000 in 2023 and USD 10,700,000 in 2024.

The company's liquidity condition from 2023 to 2024 can be described through the current ratio and cash ratio as follows:

Liquidity	2023	2024
Current Ratio (%)	86,32%	122,01%
Cash Ratio (%)	3,33%	16,82%

From the table above, we can see that in 2023 the company's current ratio is 86.32%. This shows that the company has assets of USD 0.86 for every USD 1 of liabilities. This ratio is below 100%, which can generally be interpreted as a company that is projected to have difficulty meeting its short-term obligations if all of these obligations are due at once. The company's Cash Ratio is very low, only 3.33%. This means that the company only has cash

and cash equivalents of USD 0.03 for every USD 1 of liabilities. This ratio indicates a very high reliance on other current assets (such as receivables or inventories) to meet its short-term obligations. The ability to pay short-term obligations with the most liquid assets is very limited. In 2024, the current ratio will increase significantly to 122.01%. This shows a major improvement in the company's ability to pay its short-term liabilities. This year, the company has assets of IDR 1.22 for every IDR 1 liability. This increase indicates a healthier liquidity position compared to the previous year.

The condition of the company's debt ratio in 2023 to 2024 can be described through the *debt to Equity Ratio* as follows:

Solvency	2023	2024
Debt to Equity Ratio (%)	130,86%	117,75%

From the table above, it can be seen that the DER in 2023 of 130.86% means that for every USD 1 of equity owned by the company, there is USD 1.31 in debt. This shows that companies are funded more by debt compared to their own capital. This level of financial leverage is quite high and needs to be monitored closely. In 2024, the DER will decrease to 117.75%. This means that for every USD 1 of equity, the company has USD 1.18 in debt. This decline indicates an improvement in the company's capital structure. The proportion of funding from equity increases against debt, which has the potential to reduce the company's financial risk. Nonetheless, the level of financial leverage is still quite significant.

4.3 Projected financial statements before additional third-party funds

The assumptions used to project the company's profit and loss during 2025 to 2027 are as follows: PT X's sales are projected to increase every year with production capacity growing from 3.5 million tons in 2025 to 4.5 million tons in 2027. Export sales are estimated to account for 95% of total sales, with a 5% increase in selling prices every year. Projected costs include COGS of 54.32%, and SG&A of 10.50%. Revenue is expected to increase by 17.8% in January 2025 and net profit is projected to be between 23.57% and 23.59%. On the cost side, the projection includes bank loans that will remain in 2024. In addition, the company must deposit 30% of export proceeds in accordance with Government Regulation No. 36. Balance sheet projections show a cash deficit in 2025 to 2027, especially if existing bank loans are not repaid, but it is expected that cash will remain positive in 2026 if loans are repaid. To meet cash needs, the company is expected to need additional funds from third parties, either through bank debt, financial institutions, or shareholders.

4.4 Linear Programming for Capital Structure Optimization

Capital structure optimization in this study is performed using linear programming with Solver in Microsoft Excel, as detailed below:

1. **Objective Function**

   The objective function for this solver model is to minimize the cost of capital, which, in this case, is the **Weighted Average Cost of Capital (WACC)**. To calculate WACC, we need to know the company's implemented capital structure: specifically, the percentage of equity used and the percentage of debt used. Additionally, we need to know the cost of equity and the cost of debt/loans. The WACC objective function will subsequently be linked to these aspects.

   For the cost of debt, we assume an existing loan interest rate at Bank A, specifically related to DHE (Export Proceeds) in USD currency, which is 0.5%. As explained in point 4.3.4, PT X's cash flow turns negative after implementing Government Regulation No. 36; if it were simulated without this regulation, cash flow would not be negative. This interest rate is relatively low because the credit structure and collateral coverage are considered low risk, similar to a back-to-back credit structure where the disbursed loan is 100% covered by cash collateral in the form of funds deposited for Government Regulation No. 36.

   Based on interviews with the company's finance and management, the business group is currently unable to assist the company due to the group's limited financial condition, and shareholders require the company to distribute dividends. Therefore, the only viable third-party funding source at present is bank debt. The selection of third-party funds from banking is also based on competitive or relatively low costs/interest rates.

   To determine the cost of equity (Re), we can use the Capital Asset Pricing Model (CAPM) with the following formula (Ross, 2013):

   $Re=Rf+\beta(Rm–Rf)$

   a. Rf = 6.50%, which represents the yield on Indonesian bonds with a 6-year maturity date. This data is obtained from IDX for the 2024 composite bond (FR0104).
   b. β = 1.45 for coal & related energy.
   c. Risk Premium (Rm – Rf) = 6.87%. This data is obtained from the Country Default Spreads and Risk Premiums website (2025).

   Thus, the cost of equity (Re) can be calculated as follows:

   $Re=6.50\%+1.45(6.87\%)=16.46\%$

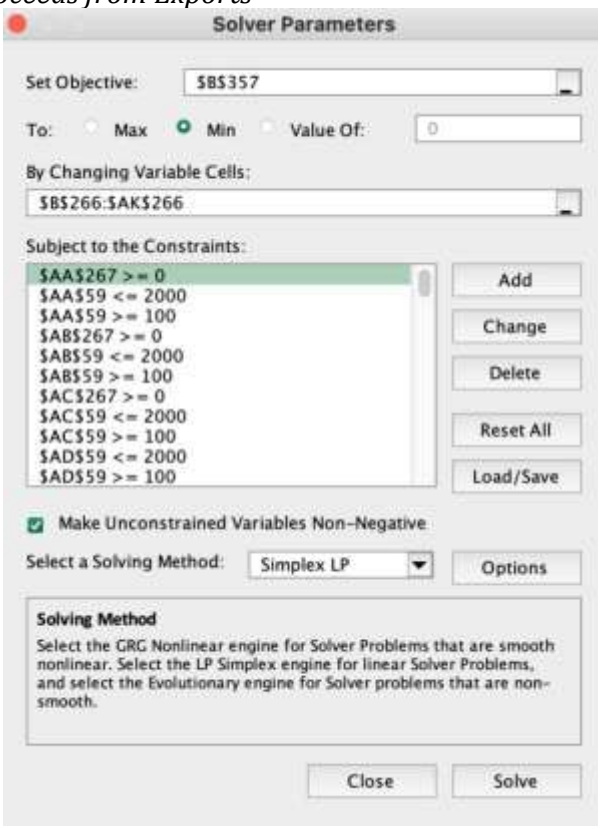
2. **Decision Variables**

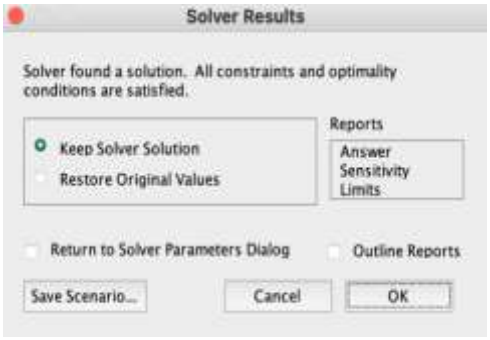
   The decision variables in this study are the percentage of loans from January 2025 to December 2027. The loan percentage will subsequently affect the amount of debt PT X will take to cover its cash flow deficit. The loan percentage plus the Self-Financing percentage must total 100%.

3. **Constraints**

   The constraints set in this study are the company's cash balance and the loan percentage. PT X's cash balance from January 2025 to December 2027 must be between USD 100 thousand and USD 2,000 thousand. The upper limit of USD 2,000 thousand is determined by the largest cash surplus obtained by PT X in the projection in point 4.3.6, where the largest cash surplus occurred in November 2026, amounting to USD 1,941 thousand, which was then rounded to USD 2,000 thousand. The next constraint is that the debt percentage must be ≥ 0 or positive. This constraint helps minimize the debt percentage from becoming negative, which would imply an equity percentage greater than 100%, or vice versa.

4. **Solver Visualization**





5. Result

a. Objective Function (WACC)

Based on the results of the capital structure optimization, the optimal WACC is 3.43%. This WACC value is relatively small because both the financial statements and the bank debt are denominated in USD

b. Decision Variables (Percentage of Loans and Self-Financing)

Capital Structure Proportion	Year 2025					
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**
% Self-Financing	0,00%	22,14%	79,44%	44,78%	60,20%	72,97%
% Loan	100,00%	77,86%	20,56%	55,22%	39,80%	27,03%

Capital Structure Proportion	Year 2025					
	Jul	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
% Self-Financing	72,53%	44,09%	100,00%	98,20%	89,71%	100,00%
% Loan	27,47%	55,91%	0,00%	1,80%	10,29%	0,00%

Capital Structure Proportion	Year 2026					
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**
% Self-Financing	0,00%	85,54%	93,13%	94,27%	100,00%	96,52%
% Loan	100,00%	14,46%	6,87%	5,73%	0,00%	3,48%

Capital Structure Proportion	Year 2026					
	Jul	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
% Self-Financing	99,17%	100,00%	98,83%	100,00%	100,00%	100,00%
% Loan	0,83%	0,00%	1,17%	0,00%	0,00%	0,00%

Capital Structure Proportion	Year 2027					
	Jan	Feb	Mar	Apr	May	Jun
% Self-Financing	100,00%	77,68%	100,00%	100,00%	53,36%	100,00%
% Loan	0,00%	22,32%	0,00%	0,00%	46,64%	0,00%

Capital Structure Proportion	Year 2027					
	Jul	Aug	Sep	Oct	Nov	Dec
% Self-Financing	100,00%	30,95%	83,96%	100,00%	0,00%	65,25%
% Loan	0,00%	69,05%	16,04%	0,00%	100,00%	34,75%

c. Financial Ratios Projection

From 2025 to 2027, PT X's current ratio is above 100%. This indicates that the company's liquidity is very good, with current liabilities fully covered by current assets. From 2025 to 2027, PT X's cash ratio is positive but below 50%. This suggests that the majority of the company's current liabilities are covered by current assets other than cash and bank balances. The capital structure optimization has not yet been able to generate ideal cash, thus the cash ratio remains below 50%. From 2025 to 2027, PT X's Debt-to-Equity Ratio (DER) is below 100%, meaning the company's reliance on debt/loans is relatively low. The capital structure optimization using Solver in this case successfully generated an optimal DER for the company.

CONCLUSION

Based on data analysis, it can be concluded that the implementation of PP No. 36 on PT X in 2023 significantly changes the company's capital structure, with the proportion of bank debt increasing to 5.55%. This has an impact on the company's liquidity and solvency, which is reflected in the current ratio and debt-to-equity ratio (DER), which each shows difficulties in meeting short-term obligations and debt dependence. Optimizing the capital structure can be done by reducing dependence on debt and increasing the proportion of one's own funds through linear programs in Microsoft Excel. Despite the healthy decline in DER, challenges in cash flow stability and debt fulfillment volatility remain, necessitating a focus on managing operational cash flows. The results of this optimization can be used as a guideline to determine a more efficient capital structure in dealing with regulations such as PP No. 36. In the future, companies need to consider alternative sources of capital, as well as further research using public companies and newer regulations, such as Government Regulation No. 8 of 2025, to make a greater contribution to the financial management of companies exposed to government regulations.

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