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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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Abstract. 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. The study aims to analyze the company's financial condition before and after the implementation of the regulation, focusing on sales, costs, and liquidity. It also utilizes linear programming optimization with Microsoft Excel's *Solver* to minimize capital costs and maximize company value. 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 optimization model helps reduce the company's reliance on debt and improves its financial ratios, such as *current ratio* and *debt-to-equity ratio*. This study provides practical insights for stakeholders in managing financial decisions under regulatory constraints and contributes to the broader understanding of capital structure optimization in the mining sector.

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 (Chanda et al., 2020; Nobanee et al., 2022; Syukri, 2020). 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 (Hadistianto & Rohmah, 2023; Setiawati, 2023).

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

PT X has implemented *PP No. 36* since September 2023. According to the financial statements for the period ending 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 sales growth, PT X had to obtain additional capital for operations by securing 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 have 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 to 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 five (*lima*) 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 (Aswin et al., 2021; Hendri et al., 2023; Riwukore et al., 2021; Yaniar Sianida et al., 2020). So it can be said that among the four (*empat*) 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.

The urgency of understanding the implications of this policy is underscored by the global importance of Indonesia in coal exports. According to data from Hafner & Luciani (2022), Indonesia is one of the top five coal exporters globally, and the mining sector, as highlighted by *BPS* (2023), represents a significant portion of the country's export earnings. The implementation of this regulation impacts not only the coal sector but also other industries such as plantations, forestry, and fisheries. However, this research specifically focuses on coal mining, given its critical role in Indonesia's economy and the large-scale financial adjustments required by companies like PT X.

Research in this domain is limited, especially in terms of practical insights into the effects of regulatory changes on capital structure optimization. Existing studies have primarily focused on regulatory impacts on tax or compliance costs, with little emphasis on optimizing financial strategies in response to such regulations. This gap in the literature highlights the novelty of this study, which examines how capital structure can be adapted to maintain financial stability while complying with new regulatory requirements.

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 considerations for financial management decision-making that balances regulatory compliance and corporate financial stability (Hayden et al., 2022; Ionescu & Diaconita, 2023; Li, 2024; Ren, 2022; Sebidi, 2023). 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 used 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 included sales, *COGS*, *SGA*, receivables, accounts receivable, and other financial items. In addition, this study optimized 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 were obtained from interviews, while secondary data were collected from financial statements. This research was 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

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:

Table 1. Analysis of PT X's Capital
Source : Data by Researcher

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	74,77%
Bank/Financial Institution Debt	-	0,00%	-	-	-	0,00%
Debts of Related Parties	12.560.000	167,26%	-	-	5.800.000	25,23%
Shareholder Debt	-	0,00%	-	-	-	0,00%
Total	**7.509.292**	**100,00%**	**11.403.432**	**100,00%**	**22.985.659**	**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 is still dominated by equity, but the company again has debt from related parties as part of its funding. Every year the company's total capital is increasing, this is because the company's sales are also increasing every year so that it requires large capital.

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:

Table 2: Breakdown of PT X's Equity Components from 2020 to 2022

Source : Data by Researcher

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:

Tabel 3.Condition from 2020 to 2022

Source : Data by Researcher

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 1851ulfils 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:

Table 4. Condition of the company's debt ratio from 2020 to 2022

Source : Data by Researcher

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.

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:

Table 5. Capital Structure of PT X for the Years 2023 and 2024

Source : Data by Researcher

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:

Table 6. Equity Composition of PT X in 2023 and 2024

Source : Data by Researcher

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:

Table 7. Liquidity Ratios of PT X for 2023 and 2024

Source : Data by Researcher

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:

Table 8. Debt to Equity Ratio Analysis for PT X (2023-2024)

Source : Data by Researcher

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.

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 5 million tons in 2028. 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 10.5%. 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.

Cost of Debt Capital and Equity Capital

To calculate the cost of equity capital, we will first calculate the expected rate of return of an asset. To determine the cost of equity capital (Re), it can be found using *the Capital Asset Pricing Model* (CPAM) with the following formula (Ross et al., 2019):

$Re = Rf + \beta (Rm - Rf)$

- Rf = 6.50% which is the yield on Indonesian bonds with a maturity date of 6 years. The data was obtained from IDX for composite bonds in 2024 (FR0104).
- β = 1.45 for coal & related energy.
- Risk Premium (Rm – Rf) = 6.87%. The data was obtained from the *Country Default Spreads and Risk Premiums* (2025) website.

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

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

Rd = 0.50%, is the DHE facility interest rate spread from existing banks.

So that WACC was obtained as follows:

WACC = (E/V x Re) + ((D/V x Rd) x (100%-T)

= (100% x 16,46%) + ((0% x 0,50%) x (100%-22%)

= 3.34%

Information:

WACC of 3.34% assuming that all fund needs of 100% come from company funds and there are no loans from third parties. This WACC will be used to calculate the initial optimization of the solver in Microsoft Excel. The WACC will later change after optimization.

Optimization of the Capital Structure of Linear Programs

Linear program capital structure optimization has been carried out using solver in Microsoft excel with the following steps:

1. Open the Data Menu in Microsoft Excel that has been made financial projections as in the point above

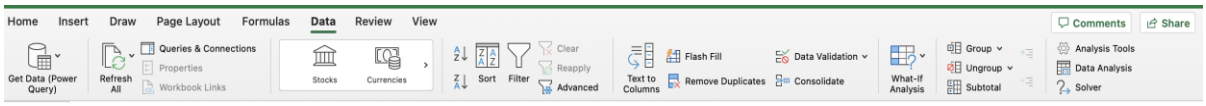

Figure 1. Data Menu in Microsoft Excel

Source : Microsoft Excel

2. Isi Solver

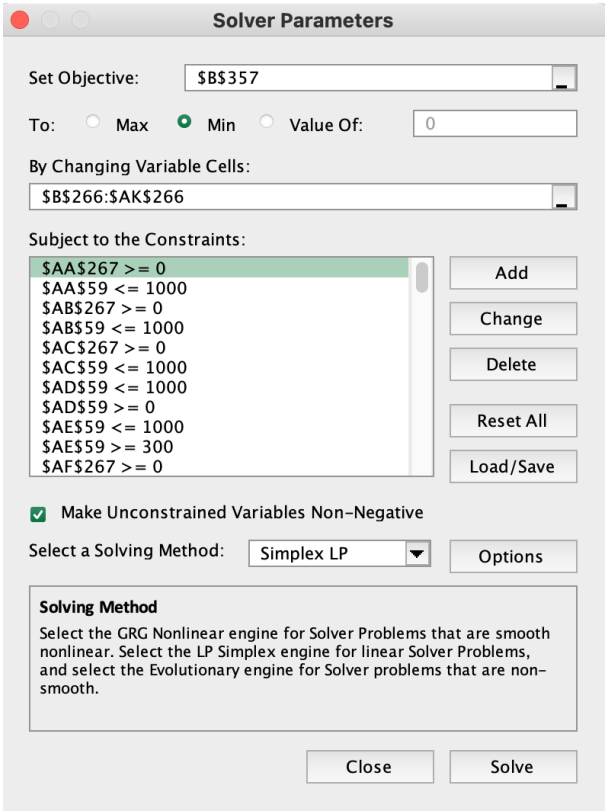

Figure 2. Solver in Microsoft Excel

Source : Microsoft Excel

Information:

a. Set Objective is filled with a WACC value of 3.34%
b. To: in min, which means minimizing capital costs so that it will increase the value of the company

c. By Changing Variable Cells: filled with % of capital from the company's operations (own funds) from 2025 to 2028
d. Subject to the Constrain is charged with the final cash balance on projected cashflow from January 2025 to December 2027.
   - In 2025 to 2027, the company's cash is projected to be a minimum of USD 300,000 with a maximum of USD 1,000,000.
   - In 2025 to 2027, the percentage of third-party funds is projected to be positive (> 0)

3. Result

After clicking solve, the financial projections in the financial model become ideal, namely with the following results:

1) The Current Ratio throughout 2025 is projected to show an increasing trend. It started at 161.30% in January and continued to increase until it peaked in November at 277.91%, before declining slightly in December at 275.82%. This improvement indicates that the company progressively has the ability to cover its short-term liabilities with available current assets. A current ratio above 100% in 2025 indicates that the company's financial performance is healthy.
2) The cash ratio in 2025 is projected to fluctuate around 3.32% to 26.18%. These fluctuations indicate that a company's cash position to pay short-term liabilities varies greatly from month to month. Despite the year-end increase, the cash ratio below 50% indicates a reliance on current assets other than cash to meet liabilities. Although the cash ratio is still below 50%, it is still a positive value so that the company can still operate quite well but needs to increase the company's cash.
3) The DER ratio in 2025 shows a steady downward trend. Starting from 25.20% in January, it decreased to 13.06% in December. The decline suggests that the company is reducing its reliance on debt as a source of funding and/or increasing its equity. This indicates a healthier capital structure and lower long-term financial risk. The DER ratio is projected to be below 100% throughout 2025, indicating the company's ability to pay good liabilities.
4) The DSCR ratio throughout 2025 is fluctuating and above 100%. This positively shows that the company's net operating income is greater than its total debt payment obligations (principal and interest).
5) The Current Ratio throughout 2026 is projected to show an increasing trend. This improvement indicates that the company progressively has the ability to cover its short-term liabilities with available current assets. The current ratio in 2026 above 100% shows that the company's financial performance is healthy.
6) The cash ratio in 2026 is projected to fluctuate around 5.06% to 23.30%. These fluctuations indicate that a company's cash position to pay short-term liabilities varies greatly from month to month. A cash ratio below 50% indicates a reliance on current assets other than cash to meet obligations. Although the cash ratio is still below 50%, it is still a positive value so that the company can still operate quite well but needs to increase the company's cash.
7) The DER ratio in 2026 shows a steady downward trend. Starting from 12.31% in January, it decreased to 7.10% in December. The decline suggests that the company

is reducing its reliance on debt as a source of funding and/or increasing its equity. This indicates a healthier capital structure and lower long-term financial risk. The DER ratio is projected to be below 100% throughout 2026, indicating the company's ability to pay good liabilities.

8) The DSCR ratio throughout 2026 is fluctuating and above 100%. This positively shows that the company's net operating income is greater than its total debt payment obligations (principal and interest).
9) The current ratio in 2027 above 100% indicates that the company's financial performance is healthy.
10) The cash ratio in 2027 is projected to fluctuate around 4.58% to 11.90%. These fluctuations indicate that a company's cash position to pay short-term liabilities varies greatly from month to month. A cash ratio below 50% indicates a reliance on current assets other than cash to meet obligations. Although the cash ratio is still below 50%, it is still a positive value so that the company can still operate quite well but needs to increase the company's cash.
11) The DER ratio in 2027 shows an increasing trend of 7.44% to 11.49%. The DER ratio is projected to remain below 100% throughout 2027, indicating the company's ability to pay good liabilities.
12) The DSCR ratio throughout 2027 is volatile and above 100%. This positively shows that the company's net operating income is greater than its total debt payment obligations (principal and interest).

CONCLUSION

Based on the data analysis, the implementation of *PP No. 36* in 2023 significantly altered PT X's capital structure, increasing the proportion of bank debt to 5.55% and impacting the company's liquidity and solvency, as seen in the current ratio and *debt-to-equity ratio* (DER), both of which indicated challenges in meeting short-term obligations and a growing reliance on debt. Optimizing the capital structure by reducing debt dependence and increasing the proportion of equity, as demonstrated through linear programming in Microsoft Excel, led to a healthier DER; however, issues with cash flow stability and debt fulfillment volatility persisted, highlighting the need for improved operational cash flow management. These optimization results can serve as a guideline for establishing a more efficient capital structure under regulations like *PP No. 36*. For future research, it is suggested that companies explore alternative sources of capital and examine the effects of newer regulations, such as Government Regulation No. 8 of 2025, using data from public companies to enhance financial management strategies for firms affected by government policies.

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