

The Relationship between CSR and Profitability through Environmental Performance Moderation: The Use of Robust Path Analysis in Warp-PLS

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ABSTRACT

This research intends to investigate the impact of company social responsibility (CSR) on profitability through the moderating role of environmental performance represented by PROPER. Path analysis using WarpPLS was employed to examine 72 manufacturing firms listed on the Indonesian Stock Exchange (IDX). The results reveal that CSR has a significant positive impact on financial performance because in addition to being accountable to their shareholders, companies can legitimize that their social actions are in line with the expectation of society. Besides, environmental performance affects company profitability since, referring to the legitimacy theory framework, the public perceives that the industrial waste management practices carried out by the companies benefit the environment. This condition has a potential to enhance competitive advantage and ultimately increase company profits. The study is expected to contribute to filling the gaps in the literature regarding the relationship between CSR and corporate performance. Besides, it increases understanding and insights for practitioners, including investors, management, and consumers, regarding the role of PROPER in mediating the link between CSR practices and company financial performance, particularly in the context of Indonesian manufacturing companies.

KEYWORDS

CSR
PROPER
ROA

INTRODUCTION

The United Nations (UN) officially issued the Sustainable Development Goals (SDGs) in 2015. Since then, almost all public companies have released numerous reports to provide stakeholders with a better understanding of their sustainability practices (Jan et al., 2021). In this regard, Blagov & Petrova-Savchenko (2021) affirmed that SDGs can only be achieved if the company is able to effectively realize Corporate Social Responsibility (CSR) as the primary foundation for reaching SDGs (Al-Dhamari et al., 2022; Umar et al., 2023). Accordingly, for over three decades, CSR has become a critical issue among academicians and practitioners (Hsu, 2018; Jan et al., 2021) due to increased customer awareness, investor pressure, and regulatory pressure (Pérez et al., 2017). Besides, CSR is tied to long-term company performance (Al-Dhamari et al., 2022; Zhang et al., 2020). However, despite this fundamental role of CSR, Harun et al. (2020) reported that there is no significant

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relationship between CSR practices and the financial performance of Islamic banks in the Gulf Cooperation Council (GCC) countries measured by Return on Assets (ROA). Similarly, Ramon-Lorens, Garcia-Meca, and Pucheta-Martínez (2021), using samples of companies in the Spanish stock market, discovered that CSR practices are not significantly related to ROA. Due to these mixed findings, studies on the relationship between CSR practices and company financial performance need to be further explored.

The Indonesian government strongly encourages the implementation of CSR and SDGs for all business entities operating in the country. The Law of Limited Liability Company Number 40 of 2007 and the Investment Law Number 25 of 2007 mandate every investment to take part in putting CSR into practice. In addition, Presidential Regulation Number 59 of 2017 concerning the implementation of sustainable development goal achievement embodies Indonesia's support for SDGs. Through the Minister of Environment Decree Number 35 of 1995, the Indonesian government established PROPER (Public Disclosure Program for Environmental Compliance) to evaluate business entities' performance and activities regarding their environmental management. PROPER is not a replacement for existing conventional compliance instruments, i.e., civil or criminal environmental law enforcement, but it rather works synergistically with other instruments to ensure more effective and efficient environmental quality improvement efforts. Information regarding a company's PROPER performance is marked in five different colors to facilitate public ease of understanding. Gold represents the highest rank, followed by green, blue, red, and black, which represents the lowest position. By integrating the community and market through the use of PROPER, industries get greater pressure to carry out more effective and efficient environmental management practices in order to improve the quality of the environment.

Due to the significant role of PROPER and inconsistent findings on the linkage between CSR and company financial performance in the existing literature, this present study attempts to investigate the impact of PROPER in mediating the relationship between CSR and the financial performance of manufacturing companies in Indonesia. These business entities are one of the largest industries in the Indonesian capital market and have become members of PROPER. The present study is expected to contribute to filling the gaps in the literature regarding the relationship between CSR and corporate performance. Besides, it increases understanding and insights for practitioners, including investors, management, and consumers, regarding the role of PROPER in mediating the link between CSR practices and company financial performance, particularly in the context of Indonesian manufacturing companies.

LITERATURE REVIEW

The finance and accounting literature seeks to explain the significance of CSR disclosure for various stakeholders. According to Bae et al. (2018), CSR disclosure is a company's strategic plan to convey positive signals to stakeholders, markets, and the public regarding its social and environmental actions. Although there is no comprehensive approach to perfectly explain CSR practices, a number of theories are widely used to unravel the key factors that drive managers to practice and disclose their CSR, including agency, stakeholder, and signaling theories (Harun et al., 2020).

Agency theory argues that companies are motivated to disclose more CSR information in order to convince stakeholders that they work for the best interest of stakeholders, which later leads to reducing conflicts and agency costs (Yuan et al., 2008; Jensen & Meckling, 1976). According to stakeholder theory, in addition to being responsible to shareholders, companies are also concerned with various community groups that affect their performance (Gray et al., 2001). The theory assumes that stakeholder groups are more interested in accountable business organizations that attempt to

disclose their CSR to satisfy stakeholders (Oeyono et al., 2011). Finally, signaling theory believes that managers disclose information to reduce information asymmetry and give a signal to stakeholders that the company performs better than its competitors (Álvarez et al., 2008).

Previous studies have employed these theories to base their analysis on the relationship between CSR and company performance. Using signaling theory, Elzahar & Hussainey (2012) proved that the economic consequences of CSR practices and disclosures are determined by the relationship between the CSR disclosure index and company value. Recently, Mohammadi & Saeidi (2022) discovered that CSR significantly affects stock returns and reduces information asymmetry, which can improve the financial performance of companies listed on the Tehran Stock Exchange. Meanwhile, using agency theory and stakeholder theory, Hichri & Ltifi (2021) found a two-way relationship between CSR and the financial performance of Swedish companies, indicating that CSR has a positive impact on the companies' financial performance, and vice versa. The study also affirmed that customer loyalty positively and significantly mediates the relationship between CSR performance and financial performance. Further, a study from Harun et al. (2020) found that higher CSR disclosure is associated with lower market performance of Islamic banks in the Gulf Cooperation Council (GCC) countries. Using the same sample, Platonova et al. (2016) revealed a positive and significant relationship between CSR disclosure and future financial performance. This implies that the CSR activities of Islamic banks in the GCC countries can have a long-term impact on their financial performance.

Hypotheses Development

CSR Disclosure Index and Financial Performance

Only companies with strong financial performance are most likely to implement and disclose their CSR activities due to high operating costs. This CSR disclosure will, however, provide them with a major competitive edge, which can improve their financial performance even more. This view is in a similar vein to Hichri & Ltifi (2021), who contended that CSR disclosure and company financial performance develop a reciprocal relationship.

The connection between CSR disclosure and corporate financial performance has been extensively investigated, but the empirical evidence is inconsistent. The majority of studies have revealed a favorable impact of CSR practices and disclosure on company financial performance (An & Ahmad, 2023; Cho et al., 2019; Lin et al., 2021; Memon et al., 2019; Okafor et al., 2021; Sulbahri et al., 2022; Yaagoubi, 2020; Yang et al., 2019). They argued that CSR strengthens a business's competitive advantages, which can later boost profitability. Several others (Adhitya & Abidin, 2021; Althaf & Dalimunthe, 2022; Karim et al., 2020; Musleh Alsartawi, 2020) have discovered an opposite finding. These studies affirmed that CSR disclosure and corporate financial performance establish a negative correlation since CSR entails high costs and expenses that erode company revenue, but the programs might not be recognized or might not live up to public or consumer expectations. Meanwhile, Harun et al.'s (2020) study on Islamic banks in GCC countries and Ramon-Llorens et al.'s (2021) investigation of Spanish business entities found no significant relationship between CSR and corporate profitability measured by Return on Assets (ROA).

The empirical results of previous studies are conflicting, and research on the relationship between CSR practices and financial performance in the context of Indonesian manufacturing companies seems difficult to find. Thus, we develop the first hypothesis that:

H₁: The CSR disclosure index has a positive impact on the financial performance of manufacturing companies in Indonesia.

CSR Disclosure Index and Environmental Performance

The components in the PROPER indicator are also contained in the Global Reporting Initiative (GRI), an instrument that is commonly employed to measure the CSR disclosure index (Ningsih & Cheisviyanny, 2019). This implies that a business that exhibits its social responsibility activities also puts the PROPER program into operation. In this regard, GRI primarily encourages CSR initiatives in the direction of sustainability reporting while PROPER promotes companies' environmental management practices (Ningsih & Cheisviyanny, 2019; Santosa et al., 2021). Stated differently, PROPER performance works in collaboration with the CSR disclosure index measured by GRI instruments in improving the quality, efficiency, and effectiveness of corporate's environmental responsibility implementation. Hence, the second hypothesis proposed is:

H₂: The CSR disclosure index has a positive impact on the environmental performance of manufacturing companies in Indonesia.

The Mediating Role of Environmental Performance in The Relationship Between CSR and Financial Performance

This study considers environmental performance as a mediating variable in the relationship between CSR and the financial performance of manufacturing companies in Indonesia. This is due to the fact that existing literature on the relationship between CSR and financial performance has diverse empirical evidence. A number of experts (Lin et al., 2021; Okafor, Adusei, and Adeleye, 2021; Yaagoubi, 2020; Yang, Bento, and Akbar, 2019) argued that these two variables establish a positive correlation. Conversely, some others (Adhitya & Abidin, 2021; Karim et al., 2020; Musleh Alsartawi, 2020) affirmed that CSR has a negative impact on company profitability. Finally, Harun et al. (2020) and Ramon-Llorens, Garcia-Meca, and Pucheta-Martínez (2021) reported that there is no linkage between the two.

Furthermore, previous research on the relationship between environmental performance and financial performance also shows inconsistent results. In this case, Abban & Hasan (2021), Bassetti et al. (2021), Boakye et al. (2021), and Wu et al. (2020) reported a significant positive relationship between environmental performance and financial performance. On the other hand, Akbar et al. (2021), Devie et al. (2019), and Jyoti & Khanna (2021) revealed the opposite. Meanwhile, the relationship between the CSR disclosure index and environmental performance seems to be favorable as one is part of the other (Ningsih and Cheisviyanny, 2019; Santosa et al., 2021). Therefore, the hypothesis developed is:

H₃: Environmental performance positively mediates the relationship between the CSR disclosure index and the financial performance of manufacturing companies in Indonesia.

Environmental Performance and Financial Performance

Stakeholder theory postulates that in addition to being responsible to its shareholders, a company also has an obligation to meet the needs of various stakeholders who are both directly and indirectly involved in its operations (Addini et al., 2019). A business that does not fulfill its obligations, particularly to the environment as an indirect stakeholder, is indicated to conduct poor environmental performance (Meiyana & Aisyah, 2019). Numerous studies, including Abban and Hasan (2021), Angelia & Suryaningsih, (2015), Bassetti, Blasi, and Sedita (2021), Boakye et al. (2021), Lee et al. (2016), Rizky & Hadinata, (2019), Wen & Lee, (2020), and Wu, Ullah, and Shah (2020) have supported

this assertion, stating that environmental performance significantly enhances financial performance. Companies that exhibit a strong commitment to the environment are more likely to be well-accepted by the public, which in turn results in higher profits. However, some other studies argued that environmental performance has the possibility to decrease corporate financial performance (Akbar et al., 2021; Devie et al., 2019; Horváthová, 2012; Iwata & Okada, 2011; Jyoti and Khanna, 2021). According to this view, if a corporation lacks financial flexibility, investing in programs that enhance environmental performance would only result in lower income.

Studies on the relationship between environmental performance and the financial performance of manufacturing companies in Indonesia are scarce. Also, the existing literature indicates inconsistent results regarding the relationship between the two. However, referring to the majority of previous findings, the fourth hypothesis proposed is:

H₄: Environmental performance has a positive impact on the financial performance of manufacturing companies in Indonesia.

RESEARCH METHOD

This research used the population of 215 manufacturing companies listed on the Indonesian Stock Exchange (IDX). The sample companies were determined based on the following criteria: (1) had not been delisted, (2) did not conduct IPOs, (3) were members of PROPER, and (4) provided data needed for this study. This process resulted in 72 companies eligible for further analysis.

The quantitative approach using non-parametric analysis was employed. The data was analyzed using robust path analysis with Warp-PLS application. WarpPLS was chosen since it is able to analyze the entire model at once, including its mediation effects (Kock & Gaskins, 2014). In addition, to ensure that the model was reliable, goodness of fit model testing was conducted (Kock, 2020). To investigate the proposed hypotheses, this study used the following estimation model.

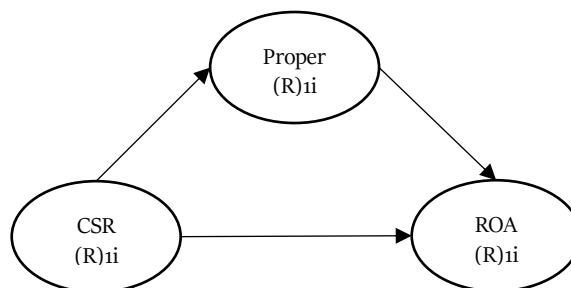


Figure 1. Research Model

In which:

ROA is the return on assets value of each sample, CSR demonstrates the ratio of CSR disclosure, and PROPER represents the environmental performance value. A more detailed explanation of the variables used in this study is shown in Table 1.

Table 1. Operational variables

Label	Variable Name	Measurement
ROA	Return on assets	Determined using net income/total assets.
CSR	Corporate social responsibility	Measured by the ratio of disclosed items/items that should be disclosed using the GRI standard, consisting of 91 items of disclosure items.
PROPER	company performance rating assessment program, consisting of five indicators	Measured using different colored indicators; Gold (5), Green (4), Blue (3), Red (2), and Black (1)

Indicators:

PROPER Gold: Companies have managed the environment more than required and have made continuous community development efforts.

PROPER Green: Companies have managed the environment more than required and have had biodiversity, environmental management systems, 3R solid waste, 3R hazardous waste, conservation of water pollution load reduction, emission reduction, and energy efficiency.

PROPER Blue: Companies have made environmental management efforts as required by applicable regulations and have fulfilled all aspects required by the Ministry of Environment and Forestry (KLH); this is the minimum value that must be achieved.

PROPER Red: Companies have made environmental management efforts but have only partially achieved results as required by the laws and regulations.

PROPER Black: this is the lowest rank in environmental management, companies have not made any efforts in environmental management, they potentially pollute the environment and are at risk of having their business permit revoked by the Ministry of Environment and Forestry (KLH).

RESULTS

Table 2 contains the results of descriptive statistics. The table reveals that the maximum CSR value is 75.82%, which is obtained by Indofood Sukses Makmur Tbk, and the minimum CSR value is 40.65%, obtained by Darya Varia Laboratory Tbk. The maximum PROPER value is 5, which belongs to Central Proteina Prima Tbk, Semen Indonesia (Persero) Tbk, Unggul Indah Cahaya Tbk, and Unilever Indonesia Tbk. Meanwhile, the minimum PROPER value is 2, which is obtained by Kabelindo Murni Tbk, Mustika Ratu Tbk, and PT Samator Indo Gas Tbk. ROA has a maximum value of 34.31%, owned by Central Proteina Prima Tbk while the minimum value of 0.07% was obtained by Mustika Ratu Tbk.

Table 2. Descriptive statistic results

	N	CSR	PROPER	ROA
Average	72	0.587239	3.361.111	0.075939
Maximum	72	0.758200	5.000.000	0.343100
Minimum	72	0.406593	2.000.000	0.000700

Source: Annual report and sustainability reports of Indonesian manufacturing companies in 2022

Structural Model

Several measures of goodness of fit (GoF) were employed as the basis for later-stage analysis; the results are presented in Table 3. The table shows that all measure scores are above the cut-off value, indicating that the model can be used to test the established hypotheses (Kock, 2017, 2020).

Table 3. Goodness of fit model test results

Goodness of Fit	value	cut-off value	Information
Average path coefficient (APC)=0.421, $P < 0.001$	<0.001	<0.05	Fit
Average R-squared (ARS)=0.345, $P < 0.001$	<0.001	<0.05	Fit
Average adjusted R-squared (AARS)=0.332, $P < 0.001$	<0.001	<0.05	Fit
Average block VIF (AVIF)=1.071, acceptable if ≤ 5 , ideally ≤ 3.3	2.311	≤ 3.3	Fit
Average full collinearity VIF (AFVIF)=1.609, acceptable if ≤ 5 , ideally ≤ 3.3	2.167	≤ 3.3	Fit
Tenenhaus GoF (GoF)=0.587, small ≥ 0.1 , medium ≥ 0.25 , large ≥ 0.36	0.477	≥ 0.36	Fit
Sympson's paradox ratio (SPR)=1.0, acceptable if ≥ 0.7 , ideally = 1	0.833	≥ 0.7	Fit
R-squared contribution ratio (RSCR)=1.0, acceptable if ≥ 0.9 , ideally = 1	0.995	≥ 0.9	Fit
Statistical suppression ratio (SSR)=1.0, acceptable if ≥ 0.7	0.667	≥ 0.7	Fit
Nonlinear bivariate causality direction ratio (NLBCDR)=1.0, acceptable if ≥ 0.7	0.833	≥ 0.7	Fit

Table 4. Path analysis results

Path	Coefficient	p-value	Supported Hypotheses
Direct Effects			
CSR→PROPER	0.325	0.002	Yes
PROPER→ROA	0.613	0.002	Yes
CSR→ROA	0.325	0.002	Yes
Indirect effects			
CSR→PROPER→ROA	0.199	0.007	Yes
Total Effect			
CSR→ROA	0.524	<0.001	

Table 4 shows the results of direct and indirect regression, p-values, and support for the hypotheses. In general, the table reveals that CSR has a positive and significant effect ($\beta=0.325$, $p\text{-value}=0.002$) on PROPER, PROPER has a significant effect on ROA ($\beta=0.613$, $p\text{-value}=0.002$), CSR has a direct effect on ROA at $\alpha=5\%$ ($\beta=0.325$, $p\text{-value}=0.002$), and CSR has a significant effect on ROA through PROPER ($\beta=0.199$, $p\text{-value}=0.007$).

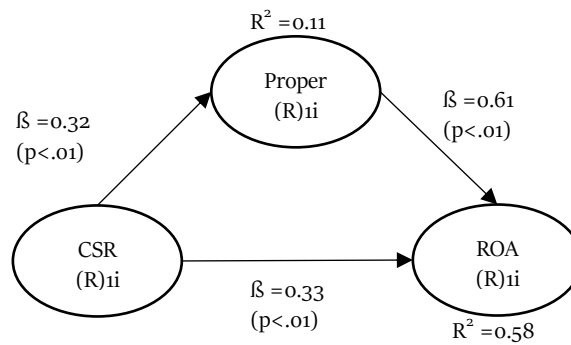


Figure 2. Robust path analysis results

The R^2 value in the CSR path to PROPER is 11%, indicating that the variation in changes in CSR can explain the variation in changes in PROPER by 11%. The remaining 89% is explained by other variables that are excluded from this study's model. R^2 in the CSR and ROA path, either directly or through PROPER, shows a value of 58%, indicating that the variation in changes in CSR and PROPER variables can explain the variation in changes in ROA variables by 58%. The remaining 42% is explained by other variables that are omitted in the research model.

DISCUSSION

This study intends to investigate the impact of company social responsibility (CSR) on profitability through the moderating role of environmental performance represented by PROPER. The result of this study reveals that, first, CSR has a positive impact on ROA. The value of the regression coefficient obtained is statistically significant, indicating that the CSR disclosure index of manufacturing companies in Indonesia affects the fluctuations of company profitability. This finding supports stakeholder theory, arguing that a company can achieve social responsibility by paying attention to its stakeholders, and legitimacy theory, stating that the community responds favorably to the company's efforts to demonstrate its social responsibility, which later will provide competitive advantages that eventually benefit the company. In other words, the company can legitimize that the social responsibility it carries out has been in line with people's expectations. The result of this study is in line with other previous research (An & Ahmad, 2023; Cho et al., 2019; Lin et al., 2021; Memon et al., 2019; Okafor et al., 2021; Sulbahri et al., 2022; Yaagoubi, 2020; Yang et al., 2019), which stated that CSR has a positive effect on financial performance. However, it differs from Adhitya & Abidin (2021), Althaf & Dalimunthe (2022), Karim et al. (2020), and Musleh Alsartawi (2020), who suggested that CSR has a detrimental impact on financial performance. Therefore, this study accepts H1, stating that the CSR disclosure index has a positive impact on the financial performance of manufacturing companies in Indonesia.

Second, the finding shows that CSR positively affects environmental performance. The study finds that each increment in the CSR disclosure score will also escalate the value of the PROPER indicator, as a proxy of environmental performance. This finding is in line with Ningsih & Cheisviyanny (2019), stating that there are similar indicators of GRI and PROPER; thus, a higher CSR disclosure score indicates a higher PROPER indicator value. In other words, when a company fully implements CSR, it also accomplishes environmental performance at the same time. Therefore, the finding of this study accepts H2, stating that the CSR disclosure index has a positive impact on the environmental performance of manufacturing companies in Indonesia.

Third, the result reveals that CSR has a direct effect on PROPER, and PROPER has a direct effect on financial performance. Indirectly, CSR through PROPER also has a significant effect on financial performance. Overall, the direct and indirect effects of CSR on financial performance are significant. This result is in line with some previous research (Lin et al., 2021; Okafor et al., 2021; Yaagoubi, 2020; Yang et al., 2019), which affirmed that there is a significant positive relationship between CSR and environmental performance. It also aligns with research by Abban & Hasan (2021), Bassetti et al. (2021), Boakye et al. (2021), and Wu et al. (2020), which explained that environmental performance is positively and significantly related to financial performance. On the other hand, the result of this study does not support Adhitya & Abidin (2021), Karim et al. (2022), and Musleh Alsartawi (2020), which stated that there is a significant negative relationship between CSR and environmental performance with financial performance. Besides, it contradicts Harun et al., (2020) and Ramon-Llorens et al., (2021), which reported that there is no relationship between CSR and financial performance. Overall, this study discovers that PROPER, as a proxy for environmental performance, can mediate the impact of CSR on financial performance represented by ROA. Therefore, it accepts H3, stating that environmental performance positively mediates the relationship between the CSR disclosure index and the financial performance of manufacturing companies in Indonesia.

Fourth, this study discovers that there is a positive relationship between environmental performance, indicated by PROPER, and financial performance. This is evidenced by the positive and statistically significant regression coefficients. According to stakeholder theory, companies can fulfill their social responsibility, particularly towards the environment as the passive stakeholder, by implementing hazardous waste treatment processes in their operations. In the view of legitimacy theory, firms' industrial waste treatment has a positive effect on the environment. This, in turn, leads to a favorable perception from the community, that the companies are contributing to the environment in alignment with societal expectations. Ultimately, this competitive advantage enhances company profitability. The result of this study aligns with previous research (Abban & Hasan, 2021; Angelia & Suryaningsih, 2015; Bassetti et al., 2021; Boakye et al., 2021; Lee et al., 2016; Rizky & Hadinata, 2019; Wen & Lee, 2020; Wu et al., 2020), suggesting that environmental performance positively impacts company financial performance. However, it differs from those stating that environmental performance negatively affects financial performance (Akbar et al., 2021; Devie et al., 2019; Horváthová, 2012; Iwata & Okada, 2011; Jyoti & Khanna, 2021). In short, this study accepts H4, which states that environmental performance has a positive impact on the financial performance of manufacturing companies in Indonesia.

CONCLUSION

This study investigates the influence of CSR on financial performance, with environmental performance as a mediating variable. The investigation gives satisfactory results, that CSR has a direct impact on profitability. It is due to the fact that companies can be accountable to stakeholders as long as they can legitimize that their social responsibility is in accordance with the community's expectations. PROPER, as a proxy of environmental performance, also has a positive effect on financial performance. Industrial waste treatment conducted by the companies has a favorable result on the environment, which will bolster their competitive advantage and eventually boost revenues. Thus, PROPER is also used as a mediating variable for the relationship between CSR and profitability.

MANAGERIAL IMPLICATION

This study affirms that when a corporation does well in its environmental performance, it also satisfies its social responsibility duties. This condition will bring a competitive benefit since stakeholders will perceive it as meeting their best interests. This condition results in increased profitability for the firm. In other words, companies that are able to fully fulfill their social responsibility and environmental performance will obtain a favorable result which can lead to better financial performance.

LIMITATION AND FUTURE RESEARCH

This research bears a limitation. The data was only limited to PROPER-member Indonesian manufacturing companies. Thus, the results of this research cannot be generalized to all manufacturing enterprises listed on the IDX. Future studies are recommended to examine all manufacturing companies, both members and non-members of PROPER, to obtain a more comprehensive conclusion.

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