Effect of Supply Chain Management to Corporate Financial Performance through Corporate Environmental Disclosure: Evidence from Indonesia

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***Abstract*— The purpose of the research is to evidence the role of corporate environmental disclosure in mediating the relationship between supply chain management and corporate financial performance. Food and beverage companies listed in Indonesia Stock Exchange in period of 2014-2018 are the sample of the current research. Path Analysis with Partial Least Squares-Structural Equation Modeling (SEM) is used to analyze data. The research finding found that supply chain management directly affects to corporate financial performance and supply chain management indirectly affect to corporate financial performance through corporate environmental disclosure. Theoritical implication of the research is that the research supports the existing theory. While practical implication of the research is that CED can be used to gain personal branding from stakeholders and to protect from SCMaction. Thus, it can increase financial and economic performance to keep company legitimate.**

Keywords— *Supply chain management, corporate environmental disclosure, and corporate financial performance.*

1. Introduction

The relatedness between supply chain management (SCM), corporate environmental disclosure (CED), and financial performance of a company is the main issue of the research. The background of the research is that to mislead from supervision of stakeholders over SCM action, a manager will conduct CED. The action can give impression of better financial performance. Financial performance of a company is a company's capability to manage its resources. It is an achievement gained by a company in financial measurement in certain period. Whether a company is in good or bad condition can be seen from financial report released by the company. The financial report can give information concerning company's performance within certain period and can be used as performance appraisal foundation of management [1].

SCMaction that will be done by managers is intended to give good impression of its performance. SCMaction can be conducted by accident as long as it is still within General Addopted Accounting Principles (GAAP) limitation, such as: the choice of accounting method that is in line with accounting norm [2]. The purpsose is to obtain profit level expected [3]. While CED activities are done by managers to mislead stakeholders from supervision of SCMactivities [4].

CED is one of company accountability to the stakeholders. Company's accountability form is not only for internal company interest but also for external interest. It means that a company not only focuses on single bottom line but also on triple bottom line. Thus the company's focus is not only for profit but also for public welfare, included natural sustainability.

Waseemullah and Shehzadi, Gill et. al., , Sun et. al., Handayani et. al., Prior et. al., and Chih et. al., have conducted researchers about SCM and CED [4-9]. In the research, Prior et. al., proved that CSR activities conducted by a company is just for covering SCM activities. According to Prior et al., the higher EM, the higher CSR [8].

However, Chih et. al. found different result. The finding is that when income smooting constitutes

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SCM indicator, there will be negative relationship between SCM and CSR [9].
The various findings of the previous researchers will be the reason why such research is still needed. The research questions are as follows: 1) does SCMpositively and significantly affect to CED?, 2) does SCMpositively and significantly affect to ROA?, 3) does CED positively and significantly affect to ROA?, 4) does CED mediate the relationship between SCMand ROA?. Thus, the aims of the research is fo find empirical evidence concerning the role of corporate environmental disclosure in mediating the relationship between supply chain management and corporate financial performance.

2. Theoretical Background and Hypothesis

Grand theory used in the current research is signalling theory, agency theory and stakeholder-legitimacy theory. SCM is a manager action to arise or to lowen the profit reported from units being the responsibility having no relationship with the arising and slowening of company’s profitability in long term [10, 11]. Manager action by accidently changing the real value of company’s assets, transaction or financial position has negative effect to employees, stakeholders and society around the company, public, manager reputation, job safety, and manager carier path [12].
A company that strives to disclose the company's environment as one of CSR activities according to Gray et. al., is a signal related to the quality of management. High quality companies tend to use environmental accounting and social accounting as a diversion from traditional financial reporting. Conversely, low quality companies choose to be consistent with limiting accounting information to external parties. Furthermore, Gray et. al., argue that the quality of financial reporting as a signal to financial market participants and other stakeholders shows that management has the ability to control the company's environmental and social risks [13].
According to Sun et. al., managers have an incentive to voluntarily disclose environmental information as a signal to be able to attract potential investors and improve corporate personal branding, especially when managers try to do supply chains management. Disclosure of the company environment gives a signal to investors and other stakeholders that the company actively plays a role in CSR practices and shows that the company's market value is in a good position. Good corporate social performance helps companies to achieve a reputation of reliability in the capital market and debt markets. Supply chains management creates certain risks for the company's future prospects and outsiders (investors and stakeholders) will take action against managers if supply chains management is substantively detected [4].
Agency theory explains further from the perspective of signaling. Agency conflict occurs when managers (agents) take opportunistic actions such as supply chains management, to maximize utility (benefits) for their own interests. Managerial actions can mislead stakeholders regarding corporate market values and financial position can cause outsiders to make wrong economic decisions. Therefore supply chains management is an agency cost [14].
This view is in line with [15] which states that when supply chains management is suspected, the value of the company will immediately decrease in the capital market. Agency theory suggests that companies can use different methods, such as compensation planning or voluntary disclosure, to reduce conflicts of interest between managers and shareholders.
Agency theory assumes that it is possible for management to behave opportunistically to maximize their own interests by carrying out supply chains management. This managerial action can be misleading and can cause outsiders to make wrong economic decisions. According to Hill and Jones stakeholder theory explains the relationship between stakeholders and information received. Managers can be used not only as owner agents but also other stakeholder agents [14]. Furthermore, research conducted by Freeman and Vea found that the company's efforts to build and maintain good relations with stakeholders is a fact that must be taken seriously by the company. The high urgency of the company in building good relations with stakeholders has placed its own definition of stakeholder understanding. Stakeholders are understood as an environmental and social element without which it is believed that the company will not last long [15].

2.1 Hypothesis Development

2.1.1 The Effect of SCM to CED

To protect manager position in a company and to keep capital flows from external resources, manager will use certain way to seek positive perception from external resources to guaratee optimum performance. It is done when a manager is involved in SCMaction. The argument is in line with perspective by Prior et. al., stating that CSR disclosure can be used for protection of manager conducting SCM. The higher SCM activities conducted can motivate a manager to look for positive perception from stakeholders through CSR disclosure activities [8]. By CSR disclosure, a company can build personal branding. Such argument is supported by the previous research by [4, 7, 8]. Based on the theory elaboration and previous research findings, the first hypothesis will be:

H_1 : SCM positively and significantly affect to CED.

2.1.2 The Effect of SCM to ROA

The existence of financial report can be used as an instrument to measure company's performance. From financial report, the owner will know about company position. A manager as company management has greater opportunity to do policy in using method to compose financial report. The effect will support manager to do SCMto increase company profit. A manager does SCMby intervening in composing financial report based on accrual and fundamental factors. It can affect company's financial performance in the future.

In [8] proved that SCM positively and significantly affect to company's financial performance. Based the argumentation, the second hypothesis will be:

H_2 : SCM positively and significantly affect to ROA.

2.1.3 The Effect of CED to ROA

CED is related with efforts done by a company to meet the responsibility toward stakeholders. Company responsibility not only focuses on company's interest by also focuses on external one, public interest. A company doing CSR well will get sympathy from public. It will have good effect to the products of the company. Public will use the product from the company. Such condition will increase the profitability level of the company and in turn will increase CFP [8].

In [10] proved that CSR disclosure positively and significantly affect to company's financial performance. Thus, the third hypothesis is:

H_3:CED positively and significantly affect to ROA.

2.2 Mediation Effect of CED to the Relationship between SCM and ROA

In [8] stated that manager can take discretionary action to manage income in effort to convey beneficial information or not about prospect of a company in capital market. Income manipulation can give information to the investors about the posibility of better income and cashflow in the near future. As a result of asimetric market information, a company can use the financial report to give signal to the investors that they have much useful information. Manager has an incentive to voluntarily expose additional accounting information as a signal to attract existing investors or potential and to increase positive image, especially when they try to involve in SCM. Additional accounting information can be in the form of CED. Therefore, CED has a role as mediator in relating between SCMand ROA. From the elaboration, the fourth hypothesis is:

H_4 : CED mediates the relationship between SCM and ROA

2.3 Empirical tests

The present research conducted the partial least squares structural equation modelling (PLS-SEM) for data analysis purposes [16-18]. PLS-SSCMwas used to analyse the path relationships in the framework of the study. Path analysis was employed to analyse the relationship among the latent variables with the aim to determine the direct and indirect effect between the studied variables. To identify the direct and indirect impact of each construct, it can be explained as follows; when the contribution of direct effect between SCMand CFP is smaller than the indirect effect through CED, CED is proven as the intervening variable.

PLS-SSCM was employed in the current study for many reasons. First, it is an appropriate technique for analyzing a small sample size. Second, it does not require a normal distribution of the data. Third analysis is able to examine multiple dependence simultaneously, as included in the model of this study. Fourth, the technique applies a different procedure for analyzing data containing the measurement, structural and overall models [19].

2.4 Measurements

The present research includes some latent variables that are SCM, CED, and CFP. The proxy of discretionary accrual measured SCM. Modified Jones Model was used to measure SCM. The discretionary accrual was calculated as follows:

$$TACC_{it} = NI_{it} - CFO_{it} \quad (1)$$

TA_{it}= Total Accrual entity i in period t
N_{it}= Net profit entity I in period t
CFO_{it}= Cash flow from activity changes I in t period
A_{it-1}= Total assets of entity i in period t (previously)
ΔRec_{it}= Change of receivable of entity i in period t
PPE_{it} = Fixed Asset Value (gross) of entity i in period t
NDA_{it}= Non-DiscretionaryActualityi in period t
$\Delta SALES_{it}$= Difference in sales entityi in period t
DA_{it}= Discretionary Accruals of entity i in period t
e = error

In order to measure CED, GRI 4 Index (Global Reporting Initiative) was employed. Based on the environmental field, the GRI 4 index consisted of one dimension and twelve aspects with 34 items. In this research, the measurement of CSR disclosure was conducted by dividing the number of the items disclosed by the company by the number of the GRI 4 environmental disclosure items (34 items). The CFP was proxied by conducting ROA, which is the proportion between net income after tax and total assets.

3. Results

Manufacturing companies listed in Indonesia Stock Exchange in period of 2014-2018 are the object of the current research. Based the data derived, there are 16 companies listed in the sector of food and beverage. Of 16 ones, 2 companies does not meet the criteria of sample (one is changing the sector, the other is delisted). Therefore, there are 14 companies to be the sample of the research. By years observation, it is derived 70 annual reports as the sample of the current research.

3.1 Hypothesis testing of effect of SCM toward CED

Hypothesis testing about the effect of SCMto CED can be seen from Tabel 1, showing that significant value is 0.001< 0.05 and beta value is positive, 0.390. It means that there is positive and significant effect between SCMand CED. Thus the first hypothesis is accepted. The higher the manager is involved in SCM activities, the higher the manager is motivated to look for positive perception from stakeholders through CED activities. CED as CSR action, is a signal to mislead shareholders from supervision of supply chain management to other entity.

The finding is in line with Prior et al., [8] stating that a manager can take discretionary action to manage the income to convey beneficial information or not concerning prospect of a company in capital market in the future. Income manipulation can show to the investor about the possibility of better income and cashflow in the future. As a result of asimetric market information, a company can use the company’s financial report that they have much beneficial information. A manager has an incentive to voluntarily expose additional accounting information as a signal to attract existing or potential investors and to increase personal branding of the company, especially when they are involved in SCM.

In line with the argumentation, Gray [13], stated that a company supporting CED as one of CSR activities is related with the signal about the quality of its management. High Quality Company tends using social and environmental accounting as misleading of traditional financial report. In other side, low quality company chooses not to expose social and environmental accounting and tend to be consistent with accounting information limited on traditional standard. Better company’s social performance help a company to get personal branding from capital market and obligation market. SCM has a risk to the prospect of the company in the future. Meanwhile external interest (investors and other stakeholders) will take strict action to the manager if SCM is detected substantially. From manager’s perspective, CED is a signal to mislead shareholders from problSCMin which a manager can be punished.

In [4] also explained that manager involved in SCMtend realizing that voluntarily environmental exposure can be used to keep organizational legitimate, especially with social and politic stakeholders. Initiative of CED provides a channel to inform stakeholders about larger company’s interest and its responsibility to behave socially. Besides, stakeholder-legitimation theory can be seen as the way to communicate, in organization-public relation, to get support from public. Manager has an incentive to use such strategy to meet the hope of other stakeholders. Therefore, motivation to expose social and environmental activities of a company is to mislead stakeholders from SCMdetection. It is supported by research finding by [4, 7, 8].

Tabel 1. Hypothesis Testing

Path	Direct Effect		Indirect Effect		Result
	coeficient	**p-value**	**coeficient**	**p-value**	
EM · CED			0,390	< 0,001	H1 accepted
EM · ROA			-0,360	< 0,001	H2 accepted
CED · ROA			0,315	0,002	H3 accepted
EM · CED · ROA	-0,360	< 0,001	0,503	0,098	H4 accepted

Source: PLS Result, 2019

3.2 Hypothesis Testing of the Effect of SCMto ROA

Based on Tabel 1, it is known that SCMsignificantly affects to ROA with significant level 0.001< 0.05 and with beta value -0.360. It means that there is negative and significant effect between SCM and ROA. The more manager is involved in SCMaction, the more it affects to ROA. The finding is supported by [5, 6].

Agency conflict occured when manager as agent conducts opportunistic action, such as EM, to maximize their own interest. Besides, manager should use financial report to send relevant information about economic performance of company as a basic for thSCMout of entity. However, because of unperfectly economic audit, manager has an incentive to manage income opportunistically. Therefore, SCM catches profit reliability of actual accounting as financial and economic performance indicator. In line with Jensen and Meckling's, agency theory postulated that manager with lower company ownership has more motive to produce accounting profit that reflect the actual company economic value [20]. Jensen also forcasted that external directors with lower stock ownership in the company will have an incentive to limit the manager. It can be used as a signal for stakeholders in making decision [21].

3.3 Hypothesis Testing of CED Effect to ROA

According to Tabel 1, it is known that CED significantly affect to ROA. It is seen from significant value 0.002 < 0.05 with beta coeficient 0.315. Thus the third hypothesis is accepted. The more a company conducts CED, the higher the ROA. The finding supports the work of Bedi et. al., [10].

In [6] argued that a company doing social responsibility can give a positive signal to the stakeholders. Stakeholder theory postulated that though CSR activities need high cost, a company will receive other cost decreasing in the future. It is in line with the statement of [7] stating that CSR activities hopefully can increase the relationship between shareholders and the other stakeholders. Building company reputation is company strategy to keep the relationship with different stakeholders and the increasing access to capital fund. In other words, social responsibility has positive effect to financial and economic performance of the company.

3.4 Hypothesis Testing of Mediating Role of CED to the Relationship between SCMand ROA

To know whether CED is able to be intervening variable between SCMand ROA, it is used a path analysis. Procedure of CED testing as mediating variable between SCMand ROA is as follows [22-24]: (1) estimate direct effect of SCMto ROA (c path), (2) estimate indirect effect simultaneously with triangle PLS SSCMModel, namely: SCM→ ROA (c path), SCM→ ROA (a path), and CED → ROA (b path).

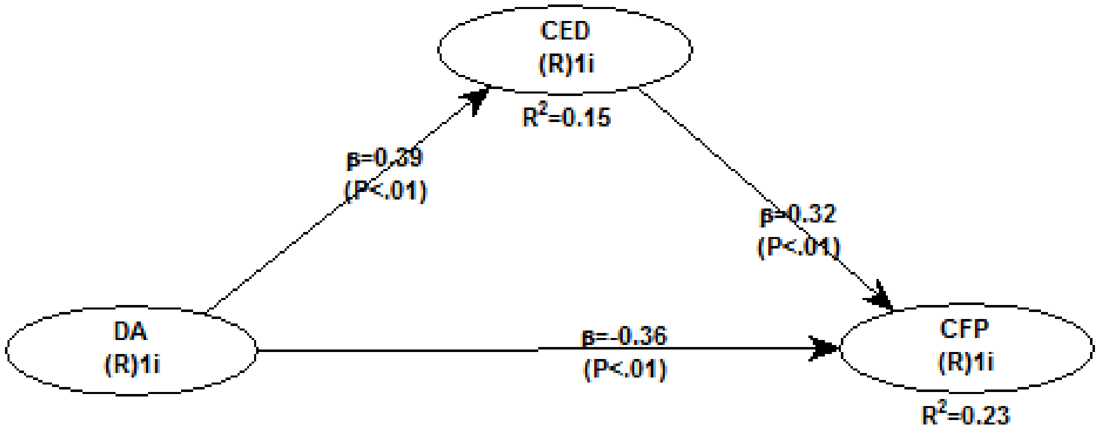

Figure 1. Testing of Model

Result of mediating model test is presented in Tabel 1. The result showed that criteria of goodness of fit have been met, namely: APC and ARS values are significant statistically and AVIF is less than 5 [22-24]. The result from Tabel 1 showed that requirement to test mediation has been met, namely: coeficient c, a, and b are significant, with the following values successively,-0.360; 0.390; and 0.315.

Direct effect

SCM · ROA		-0.360
Indirect Efect		
SCM · CED · ROA	= 0.390 x 0.315	<u>0.123</u>
Total Effect		-0.237

Total effect is -0.237. It is suitable with correlation result of SCMand ROA seen from the tabel, with the finding of < 0.001 with beta value -0.237 (significant). It means that the direct effect of SCM to ROA is smaller (-0.360) than indirect effect through CED, that is -0.237. It means that CED is a mediating variable. Therefore, it can be said that CED variable mediates the relationship between SCMand ROA.

4. Conclusions

The conclution of the current research is: 1) SCM significantly affects to CED, 2) SCM significantly affects to ROA, 3) CED significantly affects to ROA, 4) CED mediates the relationship between SCM and ROA. The research has many limitations, among others: adjusted R square is just 17,6%. For future research, it is better to add other relevant variable or modify with other variables, such as: corporate governance. The current research has theoritical and practical implication. Theoritical implication of the research is that the research supports the existing theory. While practical implication of the research is that CED can be used to gain personal branding from stakeholders and to protect from SCMaction. Thus, it can increase financial and economic performance to keep company legitimate.

References

[1] Bergstresser and Phillippon. CEO Incentive and Supply chains Management. Journal of Financial Economics, Vol. 80, pp. 511-529. 2006.

[2] Kang, S. and Kim, Y. Does Supply chains Management Amplify The Association Between Corporate Governance and Firm Performance. International Business and Economics Study Journal. Vol. 10 (2), pp. 53-66, 2011.

[3] Healy, P.M. and Wahlen, J.M. A Review of The Supply chains Management Literature and Its Implications for Standard Setting.Accounting Horizons, Vol. 13 No. 4, pp. 365-383, 1999.

[4] Sun, N., Salama, A., Hussainey, K., and Habbash, M. Corporate Environmental Disclosure, Corporate Governance and Supply chains Management.Managerial Auditing Journal. Vol. 25 Iss: 7, pp. 679-700, 2010.

[5] Waseemullah, Safi. I. and Shehzadi, A. Supply chains Management and Firm Performance: A Case of Karachi Stock Exchange Listed Firms in Pakistan.International Journal of Economics and Empirical Study.Vol. 3(6). 278-285, 2015.

[6] Gill, Amarjit,Biger, N, Harvinder, S. Mand and Neil Mathur. Supply chain Mangement, Firm Performance and the Value of Indian Manufacturing Firm.International Study Journal of Finance and Economics. ISSN 1450-2887 Issue 116, 2013.
[7] Handayani, L., Sutrisno, and Chandrarin, G. “The Effect of Supply chains Management and Corporate Governance Mechanism to Corporate Social Responsibility Discosure: Study at Public Companies in Indonesia Stock Exchange”. Simposium Nasional Akuntansi XII. Palembang. pp. 1-30. 2010.
[8] Prior, D., Surroca, J. and Tribo, J.A. Are Socially Responsible Managers Really Ethical? Exploring the Relationship Between Supply chains Management and Corporate Social Responsibility, Corporate Governance.AnInternational Review.Vol. 16 (3), pp. 443-459, 2008.
[9] Chih, H., Shen, C., and Kang, F. Corporate Social Responsibility, Investor Protection, and Supply chains Management: Some International Evidence. Journal of Business Ethics. Vol. 79, pp. 179-198, 2008.
[10] Bedi, HS. Financial Performance and Social Responsibility: Indian Scenario.Working Study, 2009. http://www.ssrn.com.
[11] Fischer, Marily, and Kenneth Rosenzweig. Attitude of Students andAccountingPractitioners Concerning the Ethical Acceptability of Supply chains Management.Journal of Business Ethics. Vol. 14. p. 433–444, 1995.
[12] Zahra, S. A., R.L. PriSCMdan A. A. Rasheed. The antecedents and consequences of top management fraud. Journal of Management31: 803–828, 2005.
[13] Gray, R., Javad, M., Power, David M., and Sinclair C. Donald. Social And Environmental Disclosure, And Corporate Characteristic: A Study Note And Extension, Journal of Business Finance and Accounting, Vol 28 No. 3, pp 327-356, 2001.
[14] Hill, C.W. and Jones, T.M. Stakeholder Agency Theory. Journal of Management Studies. Vol. 29, pp. 131-154. (1992)
[15] Freeman, R.E., and J. McVea. A Stakeholder Approach to Strategi Management. 2001. http://www.ssrn.com.
[16] Ittner, Christopher D., David F. Larcker, and Madhav V. Rajan. The choice of performance measures in annual bonus contracts. Accounting Review. pp. 231-255, 1997.
[17] Papadopoulos, Savas, and Yasuo Amemiya. Correlated samples with fixed and nonnormal latent variables. The Annals of Statistics. Vol. 33 (6),pp. 2732-2757, 2005.
[18] Lee, L., Petter, S., Fayard, D., Robinson, S. On the use of partial least squares path modeling in accounting study. International Journal of Accounting Information Systems. Vol. 12 (4). pp. 305-328, 2011.
[19] Wold, Svante, et al. The collinearity problSCMin linear regression. The partial least squares (PLS) approach to generalized inverses. SIAM Journal on Scientific and Statistical Computing. Vol. 5 (3), pp. 735-743, 1974.
[20] Jensen, M.C. and Meckling, W.H. Theory of The Firm: Managerial Behavior, Agency Costs and Ownership Structure. Journal Of Financial Economics. Vol. 3. pp. 305-360, 1976.
[21] Jensen, M.C. and J.B. Warner. “The Distribution of Power Among Corporate Managers, Shareholders, and Directors”. Journal of Financial Economics. Vol.20. p.3-24. 1988.
[22] Kock, N. Using WarpPLS in e-Collaboration Studies: Mediating Effects, Control and Second Order Variables, and Algorithm Choices. International Journal of e-Collaboration, 7(3): 1- 13, 2011.
[23] Baron, R. M., and Kenny, D. A. The moderator –mediator variable distinction in social psychological study: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51(6): 1173–1182, 1986.
[24] Hair, J., W. Black, B. Babin, and R. Anderson. Multivariate Data Analysis: A Global Perspective (7th edition). New Jersey: Pearson. 2010.