

Impact of Corporate Governance in Supply Chain Management

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Abstract— Collaborative governance plays a critical role in guiding the whole supply chain to achieve its strategic goals. This study aims to examine the impact of information provided via the disclosure of intellectual capital on the cost of equity capital. It also examines the effect of good corporate governance on the relationship between intellectual capital disclosure and supply chain. It examines firms listed on the Indonesian stock exchange for period 2013 to 2015. Data were analyzed using moderated regression analysis. Results show that intellectual capital affects the increase of cost of capital. Good corporate governance variable has significant positive effect on cost of capital. Corporate governance could serve as a determinant that influences capital expenditures by investors. The cost of capital is negatively affected by the interaction between intellectual capital disclosure index and good corporate governance. This means that the negative impact of intellectual capital disclosure index on cost of capital is negatively moderated by good corporate governance. Finally it can be concluded that supply chains face increased pressure from stakeholders to incorporate a plethora of corporate responsibility and sustainability aspects in their constituents' business practices.

Keywords— Supply Chain Management, Collaborative Governance, Cost of capital, Disclosure.

1. Introduction

Essentially, SCM is the management or governance of inter-organizational relationships. It is widely acknowledged that without appropriate governance mechanisms, supply chain collaboration is always short-lived and doomed to failure. In the current era of knowledge-based and technology-based economies, companies are required to allocate more investment in research and development, employee training, and superior new technologies [1]. Around 50% to 90% of the value created by the firm in this era is the result of the management of intellectual capital [2]. This is in line with the statement of [3] that about 75% of the company's market value in America is the result of intangible assets. Thus, the role of intellectual capital in the

acquisition of corporate value in this era of knowledge and globalization is enormous.

Since 1990, attention to intangible assets management practices has been increasing widely. One approach used in the assessment and measurement of intangible assets is the intellectual capital that has become the focus of attention in various fields, such as management, information technology, sociology, and accounting [4]. Some studies indicate that intellectual capital plays a significant role in the improvement of corporate value, among others, [5-8].

By having a strong and well-managed intellectual capital, the company will be able to anticipate future environmental uncertainty. If the company provides intensive and sustainable training and employee skills development, applying adequate information technology, and maintaining good relationships with customers and suppliers, it will be able to anticipate the possibility the entry of new competitors.

If one day a new competitor enters, then the company should be able to survive because of the support of intellectual capital. [3] argue that intellectual capital plays an important role in preparing the company's competitive strategy advantage.

The empowerment of intellectual capital not only improve performance from within the company but also gain investor confidence in the ability of the company. [6] posit that if the market is efficient, then investors will give higher value to firms with higher intellectual capital. The financial statements are unable to reflect the ownership of the intangible assets so as to increase the investment risk thereby eliminating investor confidence [9] and [10]. In addition, [7] show that the company's intellectual capital had an effect on the company's future performance as measured by stock return change one year ahead. On the one hand, there are problems as intellectual capital is difficult to measure and cannot be reported in the company's financial statements. One way that can be done is to provide information about this

intellectual capital to investors through voluntary disclosure in the company's annual report. In this respect, [11] state that the disclosure of one aspect of intellectual capital i.e., human capital proved to have a significant impact on stock returns of 1 year or 5 years later. Study by [12] analyzes the reporting of intellectual capital on the 20 best companies in Australia and show that the company's overall emphasis is that intellectual capital is critical to achieving success in the face of future competition. In addition, [13] examine the voluntary reporting of intellectual capital by firms in Australia and Hong Kong. Their results indicate that the level of intellectual capital disclosure is quite low qualitatively in both Australia and Hong Kong.

Another factor that is also proven to increase investor's assessment of corporate performance is good corporate governance (GCG). The influence of corporate governance on corporate value is due to agency problems within the company arising as a result of the separation of control and ownership. This separation creates a conflict of interest that will ultimately negatively affect the company's value. Implementation of GCG within the company is expected to reduce the agency problem, so in the end it is expected to increase the value of the company. Some empirical studies that examine the relationship of corporate governance practice and the value or performance of the firm try to accommodate some components of corporate governance practice by developing and/or using an index or corporate governance practice ranking.

The corporate governance index or rank is a scoring based on the quantification of the evaluation of corporate governance components in the enterprise. The index score or corporate governance rating is then tested in relation to the performance or value of the firm. One study, [14], find that the implementation of corporate governance can increase the company's stock returns. The other study by [15] show that the corporate governance index is positively correlated with the operational performance and market valuation. Other studies by [16-20], report almost similar to those of [15].

The quality of accounting information can reduce the information risk so that in the end it will also reduce the cost of equity capital. Previous studies, for example [21-26] have shown a negative relationship between information quality and cost

of equity capital. The argument behind this intuition is that improving the quality of information will lower the information asymmetry. Reduced information asymmetry and increased stock liquidity would lower transaction costs that will ultimately lower cost of equity capital, see for example [27-29].

This study examines the impact of information provided via the disclosure of intellectual capital on the cost of equity capital. It also examines GCG as a factor affecting the relationship between intellectual capital disclosure and capital cost. This research is important given the important role of intellectual capital in corporate development and the delivery of intellectual capital information to investors in order to reduce capital costs due to the existence of information asymmetry. The role of GCG as a monitoring tool for corporate managers will also be examined by including the role of GCG in moderating the relationship between intellectual capital information disclosure and capital cost. The results of this study are expected to contribute to the development and management of intellectual capital in Indonesia. [28].

2. Literature Review

2.1 Agency Theory

Supply chains face increased pressure from stakeholders to incorporate a plethora of corporate responsibility and sustainability aspects in their constituents' business practices. Legal and extra-legal demands are dynamically changing; almost no industry, supply chain, organization, and an organizational function are unaffected. Owing to the outsourcing wave of the last decade, in particular purchasing and supply management (PSM) plays an ever more important role in assuring sustainable supply chains in the marketplace. As shown in [29], the agency theory assumes that all individuals act on their behalf. They define agency relationship as "a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent" (p. 5). The agency relationship between agent and principal within the company can occur for example, between managers and shareholders or bondholders, between majority shareholders and minority shareholders, and between managers and suppliers.

In the contract theory or agency theory, the corporate entity is seen as the 'nexus of contract', a group of interested parties and each party has rights as stated in their respective contracts, see [29] and [30]. Each individual in this contract has an incentive to maximize their respective interests, resulting in agency costs that can reduce firm value [31].

Firms often differ in quality, whether in the form of goods and services, information, and investment opportunities, or in the securities of their entity-in the form of stocks, bonds, or other valuable securities [12]. Given the asymmetry of information occurring in the capital market, those with more information (e.g., insiders) will take advantage of the opportunity to gain higher returns than the less well informed parties. To reduce information asymmetry, and to differentiate high quality firms from other low quality companies, high-type managers send signals in the form of information to the market [12]. A signal can be defined as "... an action taken by a high-type manager that would not be rational if that low-type". Signal mechanisms can be diverse, such as signals conveyed by high-quality managers in the form of more informative intellectual capital disclosures.

2.2 Intellectual Capital Disclosures and Cost of Capital

Disclosure of information in the annual reports is expected to reduce information asymmetry and also reduce agency problem [13]. Theoretically, increased disclosure by firms can lower transaction costs thus increasing stock liquidity and decreasing uncertainty as well as reducing the adverse selection issues [28]. Better voluntary disclosure will also improve market performance [15]. The decision to disclose additional information must be based on the cost-benefit considerations.

The company may provide information to stakeholders regarding the operations of activities and the impact of these activities. One of the company's operating activities is the disclosure of the company's intellectual capital. Good disclosures are expected to reduce the information asymmetry between management and investors so as to reduce the cost of company's capital. Some studies indicate positive influence of voluntary disclosure that is lowering cost of capital [21]. Thus, better intellectual capital disclosures will decrease the

cost of capital. This argument leads to the following hypothesis.

H1: Intellectual capital disclosures lower the cost of capital.

2.3 Good Corporate Governance, Intellectual Capital Disclosures and Cost of Capital

Corporate governance is one of the mechanisms aimed at minimizing agency conflicts by aligning relationships among stakeholders to determine the direction and control of the company performance. How the owner can monitor and control the decisions and actions of the top managers will influence the implementation of corporate strategy. Effective corporate governance will align the interests of managers and owners so as to produce a competitive advantage for the company.

The principles of GCG are fairness, transparency, accountability, and responsibility. Justice with respect to fairness and equality of the treatment of minority shareholders to be protected from fraud, trafficking and abuse by insiders (self-dealing or insider wrong doing). Transparency is carried out through accurate and timely disclosure of company performance information. Management accountability is exercised through effective oversight based on the balance of power between supervisors, managers, shareholders, and auditors. The company's responsibilities relates to the company as a member of society to obey the law and to act wisely in the environment in which it operates.

According to the agency theory, GCG mechanisms and voluntary disclosure can be used to protect investors and reduce conflicts of interest between owners and agents. This theory also states that disclosure will lower agency costs [29]. GCG mechanisms will be able to pressure managers to better disclose information Voluntary disclosure will reduce information asymmetry and will ultimately have an impact on capital cost reductions. This negative impact will also depend on the company's management condition. If the company is well managed, this condition will strengthen the impact of intellectual capital disclosure on the reduction of capital costs. Thus the following hypothesis is proposed.

H2: Good corporate governance reduces the effect of intellectual capital disclosures on cost of capital

3. Methods

3.1 The Model

In order to manage supply chain risks, supply management must ensure that their local and international practices and relationships comply with their stakeholders' expected codes of conduct and that environmental and social misconducts do not occur, while maintaining profitability. The proposed framework (Figure 1) highlights the "dynamic nature" of requisite supply management capabilities and governance mechanisms. This is mainly due to the need to creating a strategic fit between supply chains and the continually changing supply chain risks. This research will use multiple regression analysis method with moderated regression analysis (MRA) technique. The analysis technique of moderated regression analysis (MRA) is an analysis to find out the relationship of influence between a variable to other variables where there are moderation variables that influence the relationship between independent variable to dependent variable as stated in the research design in the previous section. The following model is used to test the hypotheses.

$$\text{COC} = \alpha_0 + \alpha_1 \text{ICDI} + \alpha_2 \text{GCG} + \alpha_3 \text{ICDI} * \text{GCG} + \alpha_4 \text{SIZE} + \alpha_5 \text{LEV} + e$$

COC is the cost of capital measured using the Ohlson model [14]. This measured as issued in a number of studies, for example [2]. ICDI is the intellectual capital disclosures index measured using the content analysis based on [17]. Previous studies, [1], also use this measure. GCG is good corporate governance index measured using the

Indonesia of corporate governance rating agency, Size is the size of the firm measured as the natural logarithm of total assets. Previous studies, [13], also employ this measure. LEV is leverage measured as the ration of total debts over total assets. This variable is used in [11].

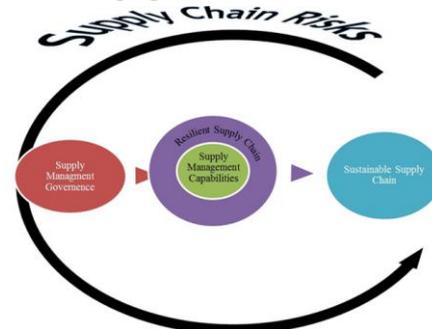


Figure 1: supply chain and god governance

Population

The population used in this study are manufacturing companies listed on the Indonesia Stock Exchange over the period of 2013-2015. The sample is determined using the following criteria company does not engage in any corporate actions during the period of analysis, such as merger or acquisition and the company's annual report is accessible. Company with outlier data will be excluded.

Sample

Based on the criteria of the sample selection, a total of 83 companies were selected. The sample selection procedure can be seen in Table 1.

Table 1. Selection of Sample Process

No.	Description	Tot
1	Company meeting the first two criteria	90
2	Company with outliers data	7
Final sample		83

4. Result and Discussion

Result

Supply management governance In this study, the vehicle to strengthening the capacity of a supply chain to ensure ecological resilience is proposed to be via supply management governance; i.e.,

structures and processes intended to coordinate and integrate various dimensions of the supply management. Governance represents the structures and processes by which societies share power, also shapes individual and collective actions. Firms should be deliberate in devising and implementing appropriate supply management governance

mechanisms to safeguard against such market imperfections and supply chain uncertainties. Such governance mechanisms make it possible to achieve supply chain ecological resilience, thus enabling the firm to adapt rapidly while retaining coherence even as its supply chain

continues to expand. Table 2 presents the descriptive statistics of variables examined in the study. As can be seen in the table, the intellectual capital disclosure index ranges from 0.0329 to 0.3406, with an average of 0.2044. This indicates that there is a relatively low index value among the companies examined in this study.

Table 2. Descriptive Statistics of Variables

Variables	Minimum	Maximum	Mean	Standard Deviation
ICDI	0.0329	0.0329	0.2044	0.0679
ICG	0.5101	0.7975	0.6166	0.2133
ICDI*ICG	0.0211	0.2218	0.1317	0.0737
Size	17.4813	28.4638	25.9840	2.9141
Lev	0.0977	0.7985	0.4086	0.1823
CoC	-0.9853	2.1849	0.1160	0.7787

Similar results are reported for GCG index of which the average is 0.6166. This figure is considerable low. In terms of leverage, on average, the companies in this study have a total debt of half

of their assets. The cost of capital interestingly has a negative value. This seems to be strange. In addition, the maximum cost of capital is higher than 100 percent. This is also strange.

Table 3. Summary of Results of Hypotheses Testing

Variables	Predicted sign	Coefficient	t-value	p-value
Constant		-3.136	-2.921	0.005
ICDI	negative	0.772	2.177	0.033
ICG	negative	1.055	2.659	0.010
ICDI*ICG	negative	-0.851	-2.637	0.010
Size	negative	0.250	2.369	0.020
Lev	positive	-0.005	-0.045	0.964
R ² (Adj. R ²)	0.582 (0.339)			
F-Stat (F-sig)	4.158 (0.000)			

The results of hypotheses testing are presented in Table 3. As can be seen in Table 3, hypothesis one (H1) cannot be accepted as the sign is positive, whilst the study predicts it shall be negative. This finding is interesting given more disclosures are associated with higher cost of capital. Similar finding is reported for the good corporate governance index. A positive coefficient is generated.

Discussion

The effect of Intellectual Capital Disclosure on Cost of Capital

The results of statistical tests showed that ICDI variables have a positive effect on the COC. This means that high corporate intellectual capital disclosure would increase the cost of capital, which indicates that the company's information about

intellectual capital can make the financial statements presented by the company more transparent and influence the investor's estimate of the risks that exist in the company. Examining the relationship of intellectual capital disclosure on the cost of capital would help managers to understand the impact of applying intellectual capital on corporate finance. The results of this study are consistent with [12] who find evidence that the greater the level of accounting disclosure done by the company accompanied by good information, the lower the cost of capital.

Moderating Effect of Good Corporate Governance on the Relationship between Intellectual Capital Disclosure and Cost of Capital

The results of this study indicate that good corporate governance has a significant negative

effect in moderating the influence of ICDI on cost of capital. The results of this study prove that GCG is a moderating variable. The effect of ICDI*ICG on cost of capital relationship is inversely proportional, whereas the higher ICDI*ICG value, the lower the cost of capital value. This condition reflects that GCG exercises good control over managers so that it can lower the capital cost incurred by investors.

This study uses company size control variables (Size) and debt ratio (Leverage). Many intellectual capital disclosures are often associated with firm size. The bigger the company, the lower will be the cost of capital. Conversely with leverage ratio, companies that have a high leverage will do a lot of disclosure that will eventually lower the cost of capital. The results of this study show size has positive and significant coefficient. This is strange as we expect that larger firm will be associated with lower cost of capital. This is consistent with research conducted by [23, 25]. Yet, the finding reported here is inconsistent with the one of [14].

The coefficient of leverage is insignificant. So, we may conclude that leverage level is not related to the level of cost of capital. This means that neither companies with high leverage or low leverage have no effect on intellectual capital disclosure with cost of capital issued by the company.

5. Conclusion

This paper aims to analyze the role of good corporate governance in supply chain management for coping with bad working conditions in factories in developing economies and related environmental problems. Based on the discussion the following conclusions are generated. Intellectual capital disclosure index has significant positive effect on the cost of capital. The interaction between intellectual capital disclosure index and good corporate governance generates negative and significant effect on cost of capital.

The finding reported here clearly imply that good corporate governance can serve as a moderating variable that reduces the negative impact of intellectual capital disclosure index on cost of capital. Good corporate governance has significant positive effect on cost of capital. This means that corporate governance can serve as a determinant variable affecting the cost of capital.

Limitations and the suggestions that can be offered based on the limitations of this study are as follows. This study uses a sample of manufacturing

companies with two years of observation. Further research is suggested to use longer observation period, to produce more accurate in showing the implications that exist mainly related to the disclosure made by the company. This study uses the Ohlson's model as a proxy to measure cost of capital. Further study may use other proxies such as weighted average cost of capital or Residual Income Model.

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