Enterprise Risk Management and Earnings Volatility: Investigating the Role of Care Ethics

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Abstract

This study analyzes the impact of the ethics of care implementation, complemented by the effectiveness of enterprise risk management (ERM), on earnings volatility; and to investigate the moderating or mediating role of care ethics in the association. Care ethics emphasizes a good relationship with other stakeholders. This is interpreted in the corporate risk management context with adequate precautionary efforts to mitigate risks. Moreover, the complementary nature of care ethics and ERM implementation has been argued to affect a company's performance in terms of earnings volatility. Data from a sample of companies listed on the Indonesia Stock Exchange were collected for the period 2012–2016. Quantitative data were analyzed using descriptive statistics and panel regression. From the ethics of care perspective, companies are expected to manage the risks effectively, which is represented in the effectiveness of ERM implementation. The results confirm this proposition, that is, ERM complements care ethics principles applied by a company in alleviating earnings volatility. The additional analysis shows that care ethics strengthens the association between ERM and earnings volatility. ERM is a growing research topic and has been investigated in previous studies. This research complements the previous studies by presenting an alternative, innovative perspective to analyze the effectiveness of ERM in correspondence with the spirit of care ethics.

Keywords: ethics of care, enterprise risk management, earnings volatility, COSO, risk, disclosure

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1. Introduction

Knowledge of risks and measures to mitigate them is significant for corporations functioning in global economic conditions, which are ever evolving and introducing complexities in the business sphere. Over the last two decades, regulatory efforts have been engendered to improve risk management. Corporate fraud, including the Enron and WorldCom cases in the United States (US), underscored investors' concerns about risk management practices. The global pressures from investors required regulators and professional bodies to reconsider risk governance mechanisms (Fichtner, 2010) to regain investors' trust.

Following the corporate scandal, some new corporate governance codes were then issued, including the Sarbanes–Oxley (SOX) Act in the US in 2002 and an enterprise risk management (ERM) framework developed by COSO (the Committee of Sponsoring Organization of the Treadway Commission) in 2004. This ERM framework broadly expanded the risk management concepts and provided a holistic approach to identify and manage risks. Supervision and navigating risk exposure to business processes are one of the most basic requirements for the implementation of risk management process. Lack of monitoring and absence of able handling of risk exposure can have a negative impact on a company, especially demonstrated in the form of earnings instability. The volatility in earnings can have impact on the accuracy of earnings prediction. It can also affect the financial distress as the higher level of earnings volatility can indicate the possibility of companies experiencing financial problems (Edmonds et al., 2015). Proper management and response to risk exposure through effective enterprise risk management (ERM) implementation can minimize the direct and indirect costs associated with the financial distress experienced by a company, especially amid a financial crisis.

Since there is a tendency to skirt of flout regulations, Dionne (2013) highlights that reliance on rules and regulations of risk management is inadequate without effective application and enforcement. We argue that the enforcement of rules and regulations also might not be adequate to achieve the intended objectives of ERM when there is a lack of ethical conduct in the implementation. Perceiving ERM as part of corporate governance and regulations may result in a "tick a box" practice for the sake of obeying the rules. From the ethics of care perspective, this study offers to examine the insulation practices applied in the corporate context in conjunction with ERM to alleviate the volatility of earnings.

In the concept of ethics of care, there are two main principles that can be used to assess whether a decision is considered morally correct. First, humans are related to each other and must maintain these valuable relationships. Second, humans must prioritize relationships with those who are considered valuable and are dependent on them. Relationships between humans are considered important because this concept underlines that a person's identity is influenced by his/her relationship with others. Caring principles are implemented alongside ERM in a company, thus ensuring decisions to mitigate risks. These measures are undertaken to satisfy stakeholders' interests and maintain a good relationship with them rather than just following regulations or requirements from shareholders.

Previous research by Edmonds et al. (2015) provides empirical evidence that firms can achieve significantly lower earnings volatility by implementing higher quality ERM. The ethics of care theory has been used in previous research on finance, accounting, and auditing, including the education of ethics to accounting students (Reiter, 1996), the stakeholder interpretation (Burton and Dunn, 1996; Wicks, Gilbert, and Freeman, 1994), the audit firm rotation (Reiter, 1997), crisis management (Simola, 2003, 2005), corporate governance (Machold, Ahmed, & Farquhar, 2008), and empathic care in accounting (Dellaportas, 2019). As far as we observe, no previous studies

have applied the ethics of care to study the complementary effect of risk management and the impact on earnings volatility. Weitzner and Darroch (2010) discussed the links between strategic goals, enterprise risk management, and ethics by offering a typology of managerial attitudes toward strategic goals and rationality and exploring the interaction between strategic and ethical decisions. Subsequently, they suggest a practical framework for managers to approach ethical dilemmas in the highly complex, volatile, and risky economy but did not specifically mention the use of the ethics of care. This creates a research gap that underscores the original contribution of this study.

This research is a part of research project investigating the implementation of the ethics of care in corporate setting. Previous research in this project discussed the impact of care ethics on earnings volatility (Adhariani & Siregar, 2018). Using the identical sample, this study expands the prior research by investigating the channel through which care ethics can be implemented in a company, that is, the ERM. Risk management can be classified as an ethical practice as it comprises serial activities to provide value for stakeholders amidst several real-world uncertainties. The identification and management of risks in an organization are expected to reduce the negative effects that can hamper the operations and sustainability of the organization (Mishra et al., 2019). However, none of prior studies investigated ethics as a moderation or mediation for the impact of ERM implementation on earnings volatility. To fill this research gap, we also investigated the role of care ethics in the moderating and mediating association between ERM and earnings volatility. Hence, there are three research questions to be answered in this study:

Research question 1: Can the implementation of care ethics together with ERM reduce the earnings volatility?

Research question 2: Does care ethics play a moderating role to strengthen the association between ERM and earnings volatility?

Research question 3: Does care ethics play a role in the mediation association between ERM and earnings volatility?

The impact of a more "caring" ERM on earnings volatility is studied on the grounds that any ethical practices in a company, including the ERM, should have a strategic value (Lantos, 2002) that provides benefits to the parties a firm should care in close relationships (such as shareholders and employees). This conforms to the principle of the ethics of care in organizational setting to maintain care and relationship with other parties without sacrificing "the self". The caring virtues are the relationship-oriented virtues that include respect, trustworthiness, compassion and fairness toward particular persons or parties with whom the company has valuable close relationships.

At present the application of ERM in Indonesia has become a necessity, even though it has not been mandatory for each line of business. Many companies in various sectors have implemented risk management processes. Several global organizations that are concerned with the development of risk management systems such as the Committee of Sponsoring Organizations (COSO) and the International Organization for Standardization (ISO) have issued guidelines for implementing risk management for companies. At the local level, the National Committee on Governance Policy (KNKG), Indonesia Central Bank (Bank Indonesia) and the Indonesia Financial Services Authority (OJK—Otoritas Jasa Keuangan) has even issued regulations regarding the obligation to implement risk management for financial institutions. In the future, it

is possible that the regulations will also apply to non-financial institutions, such as the manufacturing industry.

Over the past five years, data from the Indonesia Central Statistics Agency (BPS—Biro Pusat Statistik) show that manufacturing industries are the most developed industries and contribute the most to national economic growth, compared to other industrial sectors. The manufacturing industry contributes to 23.71% of the gross domestic product (GDP) in Indonesia. The role of risk management is hence crucial and necessary in this industry, both for the company itself and for investors and other stakeholders for the company's sustainability. Disclosures of risks and risk management in the annual report and other reporting channels will enable investors and other stakeholders to assess the company's risk profile and help them make decisions, such as investment decisions according to risk tolerance.

The results of this study suggest that ERM implemented with the spirit of the ethics of care can reduce earnings volatility; and there is a moderating role played by the ethics of care in strengthening the association between ERM and earnings volatility; but no mediation role is found. From a resource-based theoretical perspective, the findings imply that the ethics of care is an important resource for a company to strengthen the ERM implementation, even though the path to have such an influence might go through other internal business practices.

The contributions of this study are threefold. First, we extend the use of resource-based theory by including ethics as an important internal resource for a company. Second, by investigating the moderating and mediating role in ERM context, we extend the literature of the implementation of care ethics in business field. Third, practical contributions can inform managers in designing an effective ERM implementation by considering the caring principles.

Apart from the academic contribution in terms of enriching the literature of ethics and ERM, this study is also expected to introduce some practical contributions that would be useful for several stakeholders. For companies, the results can be used to understand the importance of the ethical aspect in conducting ERM to achieve firm performance, including stable earnings. For risk management practitioners, the study can provide ideas about incorporating ethics in the design of corporate risk management system. For regulators, this study can also be used to review the adequacy of regulations related to ethics and risk management.

The discussion on the theoretical prism is presented in the next section, along with previous related literature. Section 3 contains the research method and section 4 presents the analysis and discussion of the research results. The paper ends with the conclusion where the implication, research limitations, and suggestions for future research are also discussed.

2. Theoretical Perspective and Review of Literature

2.1 Ethics of Care

Freeman and Evan (1990) argued that agency theory only shows bilateral relations between shareholders and internal agents and ignores the influence of external parties. Maintaining the relationship with various parties can be better explained by the stakeholder theory, which acknowledges the important role of many parties or stakeholders who influence or are influenced by corporate decisions.

Viewing from a corporate governance perspective, those theories are arranged based on masculinist logic that is contradictory with feminist logic (Derry, 2002). This is assumed from the governance style, which is explained by the agency theory that describes the relationship with

conflicts of interest and struggle for rights, rules, and regulations. The rights and obligations are obtained through the power and (Machold et al., 2008).

Feminist corporate governance model considers companies as a web of interests, with the primary characteristic being maintenance or care (Gilligan, 1982). An important difference between this model and that of the masculinist model is the normative basis of functioning, which emphasizes mutual relations, the concept of extensive empowerment, unequal power relations, and the maintenance of duties in relationships (Machold et al., 2008). This model is not intended to be necessarily better than the masculinist model; however, it is considered complementary to the masculinist perspective that can be used to overcome challenges in the corporate context, including in the risk management sphere.

The principles of caring ethics are derived from the feminist perspective. The principles emphasize empathy, healthy social relationships, and avoidance of destruction or crime, which can be translated into the business context as not merely prioritizing profit motives (Abdullah and Valentine, 2009). In more detail, the following are the ethics of care principles that were originally developed by Gilligan (1982):

1. The maintenance of relationships with other individuals is important.
2. Moral dilemmas are contextual and cannot be generalized (whether an action is moral should be analyzed case by case).
3. Ethical dilemmas are resolved through an inductive thought process.
4. Moral development follows some stages, which are hierarchical and sequential.
5. Women's voices might better reflect the moral principles, even though men can have this attribute too.
6. Attachments, self-sacrifice, and selflessness are also important.

A study by Adhariani et al., (2017) interprets the application of ethics of care to corporate governance practices by adding two additional principles:

7. Due to the significance of maintaining a relationship with stakeholders, the nature of corporate social responsibility activities (CSR) should not only be based on ensuring performance for adhering to mandatory or compulsory rules, but it also should be voluntary or discretionary in nature.
8. Women, being one of the stakeholders, are given more attention in the fulfillment of their rights and interests.

The principles are applied in this research to investigate the "care level" of companies and to study whether ERM can complement the principles to reduce the earnings volatility. Since risk management is part of corporate governance, it is argued that the application of both caring principles and ERM can complement each other in achieving the goal of satisfying stakeholders' objectives and welfare while achieving profit targets. The achievement of these goals requires low levels of earnings volatility and good corporate performance.

The implications of the ethics of care theory in this research are to provide empirical evidence of the management responsibility in fulfilling and protecting stakeholders' interests through the effective implementation of ERM to achieve consistent earnings level and low earnings volatility. The ERM itself has indeed accommodated the ethical aspect in the principles; however, when put into practice, there is a chance that a company is merely doing it to meet regulatory demands. We argue that when ethics of care is practiced together with ERM, it will enhance the ethical aspect of ERM implementation in protecting the interests of stakeholders.

2.2 Resource-based theory and care ethics

We argue that ethics is a resource for a firm to achieve a sustainable competitive advantage. Resources are all assets, capabilities, business processes, information, level of knowledge, firm attributes and other internal resources controlled by a firm that enables them to improve efficiency and effectiveness (Barney, 1991; 2001). The resources create value added and a competitive advantage compared to market rivals from controlling and optimizing the use of a unique set of resources (Barney and Hesterly, 2006; Mishra et al., 2019). Several prior studies have used the resource-based perspective to understand why some companies engage in certain activities or make certain decisions. Branco and Rodrigues (2006) argued that companies consider CSR as a resource to gain internal and external competitive advantages. Litz (1996) suggested the social and ethical dimensions of organizational resources as contributing factors of organizations sustainability. Ethics can constitute a source of a competitive advantage when it is embedded in the corporate culture in inimitable ways (Barney et al., 2001). In this notion, corporate ethics provides guidance to enable ideas and moral intention from top executives and employees to be developed into policies and actions supporting the company's sustainable performance.

In studying the role of ethics in the association between risk management and firm performance in terms of earnings volatility, this research focusses on the ethics of care which is also called relational ethics for its emphasis on the importance of human relationships and emotion in behavioral decisions (Gilligan, 1977, 1982; Noddings, 1984). Care ethics views that the moral obligations exist in the relationship between the person in need and the one who is capable to meet the need; hence it preserves and nurtures the needs of the most vulnerable party (Dellaportas, 2019; Burton and Dunn, 1996). In the concept of ethics of care, there are two principles that can be used to assess whether a decision is considered morally correct. The first principle is the understanding that humans are related to each other and must maintain these valuable relationships. The second principle is the understanding that humans must prioritize relationships with those who are considered valuable and dependent on us. Relations between humans are considered important because this concept holds that a person's identity is influenced by his relationships with others, creating a web of dependent relationships to guide ethical behavior. This web of relationship is further translated as a care-based stakeholder theory (Oruc and Sarikaya, 2011; Burton and Dunn, 1996, Wicks et al., 1994).

In maintaining the relationship, care-ethics also acknowledges the role of emotion in developing concern for and engagement with others. As suggested by Dellaportas (2019), emotions should be viewed as a source of information to trigger ethical decision making. Although emotion can be a source of bias or disruption, it is not wise to disregard its role in decision making. Especially in implementing risk management in a company, emotions complemented with other factors can guide in assessing the risks of particular activities and subsequently develop approaches to manage them. Therefore, caring behavior can provide solutions to contemporary business issues as good personal relationships, better communications, teamwork, and trust as suggested by the ethics of care are essential for a business firm to be competitive (Cavanagh, Moberg, and Velasquez, 1995).

2. 3 Enterprise Risk Management

ERM is a comprehensive, systematic, and integrated framework that is carried out by all company structures to manage risks comprehensively both from internal and external companies. ERM is

designed to minimize risks at the desired level with the aim that the achievement of business objectives is not hampered, while also maximizing the value of the company (Lam, 2003). The COSO Board commissioned and published Enterprise Risk Management—Integrated Framework in 2004 with the purpose of helping entities better protect and enhance stakeholder value. Its underlying philosophy was that "value is maximized when management sets strategy and objectives to strike an optimal balance between growth and return goals and related risks and efficiently and effectively deploys resources in pursuit of the entity's objectives."

COSO then provided the updated framework in 2017 (COSO, 2017). The updating of the framework was done because over the past decade, the complexity of risk has changed, and new risks have emerged that demand enhancements in ERM and risk reporting. The updated framework addresses the evolution of ERM and the need for organizations to improve their approach of managing risk to meet the demands of an evolving business environment. The updated framework is explained in-depth in the following section.

a. More clearly connects ERM with a multitude of stakeholder expectations.
b. Position risk in the context of an organization's performance rather than as an isolated exercise.
c. Enables organizations to better anticipate risk so they can get ahead of it, with an understanding that change creates opportunities and not merely the potential for crises.

2.4 Earnings Volatility

Earnings and its volatility can describe the corporate performance in a certain period. Barnes (2001), and Hodder et al. (2006) found that higher earnings volatility is associated with lower market values. Graham et al. (2005) also found that high earnings volatility was perceived to be riskier; this was in the sense that the higher the level of earnings volatility, the higher the risk of corporate financial distress. Kim et al. (2001) stated that earnings volatility would increase the likelihood of company bankruptcy. Financial distress is a sign of bankruptcy in terms of the decline in financial conditions of a company, which also encompasses these conditions that occurred before bankruptcy. The bankruptcy can be caused by the failure of the company's operations to produce profit as expected and the inability of a company to repay its debt.

2.5 Development of Hypotheses

Achieving good financial performance and stable earnings is part of a company's key objectives. Good financial performance can be demonstrated through high levels of earnings consistently or through low earnings volatility. Low earnings volatility is also one of the main objectives of ERM implementation. This objective is related to the company's ability to reduce the direct and indirect costs incurred for handling financial distress risks. Edmonds et al. (2015) found that changes in the quality of ERM implementation are strongly associated with changes in volatility levels of earnings.

Apart from following a framework and certain regulations related to ERM, a company is also expected to implement ERM by accommodating a high level of ethics to ensure the achievement of its own objectives and to protect stakeholders' interests. This means that when there is an ethical dilemma in implementing ERM, the case should be analyzed separately rather than generally following the rules. It is also suggested that the ethical aspect to protect stakeholders be prioritized over other aspects. In this study, firm performance is measured using earnings

volatility. Stable earnings to ensure a sustainable business will protect not only shareholders but also other stakeholders, including creditors, employees, consumers, and suppliers.

Based on these arguments, we develop the following hypothesis:

H1: The implementation of ethics of care in complement with ERM will reduce earnings volatility.

The exploration of the moderating role of the ethics of care is based on the ground that the implementation of the ethics of care in a company can strengthen the negative impact of ERM on earnings volatility. This means that the ethics of care ensures the practice of ERM in mitigating risks in a company is a not a cheap talk or just an intention to fulfill the checklist. The ethics of care becomes the necessary condition for ERM to lower the earnings volatility.

H2: The implementation of ethics of care can strengthen the negative impact of ERM on earnings volatility.

The ethics of care is also expected to play a role in a mediating relationship through two estimated channels. First, the implementation of care ethics will enhance ERM practices, which then will further lower the earnings volatility. The role of care ethics in a mediating association has been investigated in previous studies for the CSR context. Tuan (2012) found that the ethics of care cultivate ethical CSR, which then contributes to the stronger corporate governance. It is made possible from the ability of care ethics to elevate organizational members to exercise a higher sense of accountability and commitment to maximize the benefits for stakeholders beyond the level required by law, policies, and rules of the organization.

H3: The implementation of ethics of care can act as mediating or intervening variable on the association between ERM and earnings volatility.

3. Research Methods

This research uses the multiple regression method to analyze the secondary data of companies listed in the Indonesia Stock Exchange for the period 2012–2016. The data of care ethics and ERM are hand collected from disclosures provided by companies in the sustainability report and annual report, whereas the data for earnings volatility and control variables are gathered from the Eikon database.

3.1. Regression Model

This study utilizes the quantitative method using regression to test the hypothesis. The regression models to test the three hypotheses are as follows:

(1) $EV_{it} = \beta_0 + \beta_1 EoC_{it} + \beta_2 ERMit + \beta_3 Lev_{it} + \beta_4 PBV_{it} + \beta_5 Size_{it} + \beta_6 ROA_{it} + \beta_7 PER_{it} + \varepsilon_{it}$

(2) $EV_{it} = \beta_0 + \beta_1 (ERM)_{it} + \beta_2 (EoC)_{it} + \beta_3 (ERM*EoC)_{it} + \beta_4 (Lev)_{it} + \beta_5 (PBV)_{it} + \beta_6 (Size)_{it} + \beta_7 (ROA)_{it} + \beta_8 (PER)_{it} + \varepsilon_{it}$

(3a) **the implementation of care ethics will enhance ERM practices:** $ERM_{it} = \beta_0 + \beta_1 (EoC)_{it} + \beta_2 (EV)_{it} + \beta_3 (Lev)_{it} + \beta_4 (PBV)_{it} + \beta_5 (Size)_{it} + \beta_6 (ROA)_{it} + \beta_7 (PER)_{it} + \varepsilon_{it}$

(3b) **ERM practices induced by care ethics will further lower the earnings volatility:**

$$EV_{it} = \beta_0 + \beta_1 (ERM)_{it} + \beta_2 (Lev)_{it} + \beta_3 (PBV)_{it} + \beta_{14} (Size)_{it} + \beta_5 (ROA)_{it} + \beta_6 (PER)_{it} + \varepsilon_{it}$$

Information:

EV	Earnings volatility
EoC	The level of caring ethics exercised in a company
ERM	The effectiveness of ERM implementation
Lev	Leverage ratio
PBV	Price to book value ratio
Size	Company size
ROA	Return on asset
PER	Price–earnings ratio
ε	Error, i.e., the possibility of other variables affecting earnings volatility which are not considered in this study

3.2. Measurement of Variables

The dependent variable used in this study is earnings volatility, which is closely related to risk, as higher earnings volatility means greater risk to the company. Following Hodder et al. (2006), earnings volatility is measured by the standard deviation of net income before extraordinary items. The result is then divided by total assets to negate the sample size bias.

$$EV = STDEV \left(\frac{Net\ income\ before\ extraordinary\ items_{it}}{Total\ asset_{it}} \right)$$

The ethics of care exercised in a company is measured using content analysis of disclosures with scoring ranging from 0 to 5. The higher the score represents the more complete disclosures. A company's score is computed by the number of items disclosed in the reports divided by the highest score achieved by a company in the sample. We do not divide it with the maximum relevant disclosure items since it is unlikely that a firm can achieve a maximum score of 5 for the whole category of ethics of care disclosure. The codes are explained in Table 1.

Table 1. Disclosure Codes

Disclosure codes	Definition
0	No disclosures
1	Pure narrative disclosure (qualitative)
2	Pure narrative but provide more details (qualitative)
3	Numerical disclosure (quantitative)
4	Numerical and narrative disclosure (quantitative and qualitative)
5	Numerical and narrative disclosure (quantitative and qualitative) but comparable (contains year comparisons)

Source: modified from Beck et al. (2010); as also applied by Adhariani and Siregar (2018)

The second main independent variable is the effectiveness of ERM, which is measured by assessing the fulfillment of points related to the assessment in achieving the objectives of effective ERM implementation based on the risk management framework formulated by COSO. Four points become the main indicators of effective implementation of ERM (COSO, 2009):

1. There are assessment activities to understand the philosophy of risk that is aligned with the company's risk appetite. Risk appetite is a broad-level assessment of the company's ability to accept risks that occur, without affecting the achievement of the stakeholders' objectives.
2. The board of directors knows the extent to which the company's management has implemented an effective ERM for the company. The commitment of the board of directors to the implementation of ERM in the company is demonstrated by the ongoing monitoring regarding the effectiveness of the risk management process, which includes the process of identifying, evaluating, and managing the company's risk exposure.
3. A review of the company's entire risk portfolio is carried out by considering the company's risk appetite. Effective risk management depends on the ability of the board of directors to understand and assess all risk exposures pertaining to the strategy used by the company.
4. There is the vigilance of significant risks by managing appropriate risks. To preserve the value of the company and protect the objectives of the stakeholders, the company must be more aware of the company's significant risks.

Based on the four indicator points above, the independent variable is measured by evaluating the fulfillment of each criterion for the effectiveness of the implementation of ERM in companies using a rating system with a range of values between 1 and 3. Poor implementation is given a value of 1, medium (fair) is given a value of 2, and good implementation is assigned a value of 3 based on the disclosure of information presented in the company's annual report. Companies that do not meet the effectiveness criteria set by COSO will get a minimum score of 4, and companies that meet the effectiveness criteria set by COSO will get a maximum score of 12. The measurement of the control variables is explained below:

a. Leverage Ratio

The leverage ratio describes how much the company uses funds from external parties (through loans) to finance operations and for the expansion of the company. In this study, the leverage ratio is measured using the debt to asset ratio (DAR), representing the percentage of total assets financed by loans (debt) (Robinson et al., 2008). The leverage ratio is calculated using the following equation:

$$DAR = \frac{Total\ Debt}{Total\ Asset}$$

b. Price to Book Value Ratio

Price to book value (PBV) ratio is obtained by dividing the price of a company's shares against the book value of the company. This ratio shows the ability of a company to create value from the amount of capital invested (Robinson et al., 2008). PBV ratio is calculated using the following equation:

$$PBV = \frac{Closing\ Price}{Book\ Value\ Equity\ per\ Share}$$

$$Book\ Value\ Equity\ per\ Share = \frac{Total\ Shareholders\ Equity}{Outstanding\ Share}$$

c. Firm Size

Firm size (SIZE) is measured from the natural logarithm of total assets at the end of the year.

$$SIZE = \ln(Total\ Asset)$$

d. Return on Assets

Return on assets (ROA) measures how efficient a company is in using its assets to generate profits (net income) (Robinson et al., 2008). The higher this ratio indicates, the more efficient the company is in utilizing its assets. ROA is calculated using the following equation:

$$ROA = \frac{Net\ Income}{Total\ Asset}$$

e. Price–Earnings Ratio

This study also controls changes in income growth concerning earnings volatility using the price–earnings ratio (PER) as a control variable. The higher the value of PER, the higher the consistency in the level of earnings, or in other words, the lower earnings volatility. PER is calculated using the following equation:

$$PER = \frac{Closing\ Price}{Earnings\ per\ Share}$$

4. Results and Discussion

The sample used in this research comprises manufacturing companies listed on the Indonesia Stock Exchange from 2012 until 2016. Details of the sample selection are depicted in Table 2.

Table 2. Selection of Research Sample

Description	Amount
Listed manufacturing companies 2012–2016	144
Manufacturing companies with incomplete data	(28)
Manufacturing companies used as samples	116
Research period (2012–2016)	5
Total observations (116 companies x 5 years)	**580**

4.1. Descriptive Statistics

Descriptive statistics gave a general description of each variable tested. EV variable showed an average value of 0.048, the minimum value of −1.279, and a maximum value of 0.657. This means that the average volatility level of manufacturing companies in Indonesia between 2012 and 2016 amounted to 4.8% with 6.57% as the highest volatility level. The minimum value at EV is −1.279, which means that during that period, there is a manufacturing company that suffered losses. The ethics of care disclosures show an average of 0.43 which means that on average, the sample companies disclose less than 50% items of caring principles.

ERM has an average of 9.328, a standard deviation of 1.347, a minimum value of 6, and a maximum value of 11. The average values show scores that exceed the value of the middle scores of ERM (9.328 > 8), indicating that most manufacturing companies in Indonesia have implemented ERM quite appropriately in accordance with most of the COSO set criteria.

Table 3. Descriptive Statistics

Variable	Average	Standard Deviation	Min.	Max.
EV	0.048	0.116	-1.279	0.657
EoC	0.430	0.187	0.041	1
ERM	9.238	1.347	6.000	11.000
LEV	0.469	0.278	0.000	0.988
PBV	2.781	7.431	0.002	80.845
SIZE (Rp 000)	8,712,876,624	24,837,249,123	92,041,274	261,855,000,000
LNSIZE	0.489	1.310	-3.097	3.311
ROA	0.051	0.122	-1.279	0.657
PER	0.006	0.482	-7.284	2.880

Description	
EV	Earnings volatility
EoC	Ethics of care/caring level
ERM	ERM effectiveness
LEV	Leverage ratio
PBV	Price to book value ratio
SIZE	Company size
LNSIZE	Natural logarithm of total assets
ROA	Return on asset
PER	Price-earnings ratio

4.2 Correlational Analysis

Pearson correlation test is conducted to analyze the relationship between one variable and another, either between the dependent variable and the independent variable or the relationship between the independent variable and other independent variables. The values in this test are ranging from −1 to 1. A value of 0 indicates no relationship between variables, whereas 1 or −1 indicates a perfect relationship between variables. The results of the Pearson correlation test are presented in Table 4, indicate that the care ethics level is positively related to earnings volatility, while ERM is negatively related. The causal relationship will be further investigated in the regression test.

Table 4. Pearson Correlation Test Results

	EV	EoC	ERM	LEV	PBV	SIZE	ROA	PER
EV	1.00							
EoC	0.19 (0.00)***	1.00						
ERM	-0.27 (0.00)***	-0.05 (0.20)	1.00					
LEV	-0.02 (0.68)	-0.01 (0.77)	0.04 (0.27)	1.00				
PBV	0.49 (0.00)***	0.06 (0.11)	-0.16 (0.00)***	-0.02 (0.63)	1.00			
SIZE	0.39 (0.00)***	0.19 (0.00)***	0.01 (0.81)	-0.05 (0.20)	0.13 (0.00)**	1.00		
ROA	0.46 (0.00)***	0.11 (0.01)***	-0.59 (0.25)	-0.04 (0.25)	0.35 (0.00)***	0.09 (0.03)**	1.00	
PER	0.11 (0.00)***	0.84 (0.26)	-0.23 (0.00)**	-0.02 (0.61)	0.02 (0.66)	-0.02 (0.54)	0.59 (0.00)***	1.00

4.3 Multiple Regression Analysis

Prior to performing the regression test, the classical assumption tests have been conducted to ensure that the regression model generates the best linear unbiased estimator. Model selection for panel data has also been made with the results that show that the fixed effect model is the most appropriate. Results of the hypothesis testing are presented in Table 5.

Table 5. Results of Regression Test

Hypothesis: The implementation of ethics of care in complement with ERM will reduce earnings volatility.

Model: $EV_{it} = \beta_0 + \beta_1 EoC_{it} + \beta_{2E} RM_{it} + \beta_3 Lev_{it} + \beta_4 PBV_{it} + \beta_5 Size_{it} + \beta_6 ROA_{it} + \beta_7 PER_{it} + \varepsilon_{it}$

Variables	Predicted Sign	Coefficient	p-value	Significance
EoC	-	-10.89	0.003	***
ERM	-	-0,039	0.028	**
LEV	+	0.027	0.332	-
PBV	-	0.016	0.000	***
SIZE	-	0,471	0.000	***
ROA	-	1.594	0.000	***
PER	-	0.046	0.259	-
R Squared	29.73%			
Prob > F	0.0000			

*** Significance at level 1% (one-tailed)

** Significance at level 5% (one-tailed)

* Significance at level 10% (one-tailed)

Information:

EV = earnings volatility: the standard deviation of earnings; EoC = the score of ethics of care exercised; ERM = Enterprise Risk Management: the effectiveness of ERM implementation score; LEV = leverage ratio, proxied by the ratio of total debt per total asset; PBV = price to book value ratio; SIZE = firm size proxies with the natural logarithm of total assets; ROA = return on asset ratio; PER = price-earnings ratio

The results of the regression show that the independent variables have the ability of 29.73% to explain the dependent variable. Consistent with the hypothesis, EoC and ERM are negatively associated with earnings volatility. All significant control variables (PBV, Size, and ROA) show contradictory results from the expected signs. It was expected that the higher PBV and ROA, as well as the larger size of a company, will reduce the earnings volatility; however, the results are not consistent with the prediction.

4.4 Moderated and Mediated Regression Results

The additional analysis to know whether care ethics plays the moderating or mediating role is shown Table 6. The results of the hypothesis testing provide empirical evidence on the moderating role of care ethics in the association between ERM and earnings volatility. However, the channel through which care ethics can give significant impact is not found in the mediating model as the significant effect of care ethics on earnings volatility disappears when the mediating variable of ERM is controlled for.

Table 6. Findings from the Moderated and Mediated Regression Models

Moderated Regression Results				
Variables	**Predicted Sign**	**Coefficient**	**p-value**	**Significance**
ERM*EoC	-	-0,003	0.067	*
R Squared-within	8.25%			
Prob > F	0.0000			
Mediated Regression Results				
Description of Path	**Path Coefficient**	**Z statistics**	**p-value**	**Significance**
Direct effect:				
-EoC → EV	0.006	2.23	0.026	**
-EoC → ERM	-0.008	-1.28	0.199	
Indirect effect:				
-EoC → EV	-0.0003	-1.04	0.296	
*** Significance at level 1% (one-tailed)				
** Significance at level 5% (one-tailed)				
* Significance at level 10% (one-tailed)				

Information:
EV = earnings volatility: the standard deviation of earnings; EoC = the score of ethics of care exercised; ERM = Enterprise Risk Management: the effectiveness of ERM implementation score; LEV = leverage ratio, proxied by the ratio of total debt per total asset; PBV = price to book value ratio; SIZE = firm size proxies with the natural logarithm of total assets; ROA = return on asset ratio; PER = price-earnings ratio

4.5 Sensitivity Analysis

To check the robustness of the result, we perform sensitivity analysis by changing the measure of earnings volatility to the standard deviation of EBIT (Earnings before Interest and Taxes) divided by total assets and to the standard deviation of ROA (Return on Assets). ROA is not assigned as a control variable in the latter equation to avoid multicollinearity with its standard deviation. The results show consistency with the main model where EoC and ERM are negatively associated with earnings volatility; hence, confirm the complementary effect of ERM and care ethics in reducing the earnings volatility. We also change the measurement of care ethics scores by dividing the number of items disclosed in the reports with the maximum relevant disclosure items. The results are consistent with the main tests.

4.6 Discussion

The results of this study confirm the benefit of applying a caring approach complemented with ERM in influencing firm performance in terms of lower earnings volatility. In line with the resource-based theory, care ethics is found to act as a resource for a company to strengthen the association between ERM and earnings volatility. The results can be attributed to the principles of the ethics of care that can be contrasted with beliefs based on rights and separative thinking (Reiter, 1997) that focus on rules and regulations. Care ethics focuses on responsibility, relationship, and contextual aspects of problems. ERM is essentially a moral practice with which the ethics of care

can enable its potential value beyond satisfying regulatory requirements. For example, when dealing with reputable risk, a caring approach will encourage firms to apply good business practices in order to maintain a good reputation not only to achieve legitimacy but also develop a good relationship with stakeholders. Another example is when a company has an environmental risk of causing a harmful effect on the environment, a caring approach will suggest that the company develop good communication with related stakeholders (such as local government, the community, and environmental organizations) to avoid environmental problems affecting its business activities.

In relation to ERM, the results are consistent with that of Edmonds et al. (2015), indicating that a high quality of ERM implementation will help companies maintain stable earnings. The effective implementation of ERM in a company will give a good reaction to financial performance so that the resulting profit will have a good level of stability and consistency. The findings also support the claim that ERM can mitigate the financial risk in terms of earnings volatility. This can be achieved by several means in the risk management system, including through the risk activities coordination, employees' involvement, and the use of natural hedges. This signifies the benefits of an effective ERM in achieving strategic objectives which is related to operations, strategy, reporting, and compliance as suggested by COSO (2017).

The result also provides evidence that managers in the manufacturing industry have implemented ERM effectively in their companies. Through this activity, stakeholders can monitor how the company performs risk management when it is exposed to each potential and its resources, as well as the business processes conducted by the company. Effective implementation of ERM will help the management convey information to stakeholders that the company has done a good thing by managing all risk exposures that have the potential to have a negative impact on the company. The effective implementation of ERM will have a positive impact and enhance company performance to create value for the company, including meeting profit targets (Dichev & Tang, 2006).

5. Conclusion

This research offers an alternative theoretical perspective in the form of the ethics of care to analyze the ethical aspect of businesses, including in enterprise risk management (ERM). The benefit of applying caring principles and ERM is measured against the firm performance in terms of earnings volatility. The results are consistent with the notion that caring approach implemented in a company, complemented with an effective ERM, will reduce the earnings volatility. The care ethics is also found to strengthen the negative impact of ERM on earnings volatility.

Apart from the theoretical implications, this study has several practical implications. First, as the results show that the caring approach and ERM are negatively related to earnings volatility, the adoption of the practices will be more attractive for companies. However, just relying on the adoption is not adequate. The implementation of care ethics principles requires a firm to develop good communication and relationships not only with the shareholders but also the stakeholders. The effective ERM also plays a role in achieving operational efficiency and generate positive impacts on stakeholders' concerns. ERM best practices advised by COSO include a complete method of risk management, risk measures standardization, risk ownership formalization, employees' engagement in risk management processes, and assurance of the appropriate documentation and communication of risks and opportunities.

As with all research, limitations are inherent in this study. First, the generalizability of findings might be hampered by the small sample size. Further research can use a broader sample,

for example, by conducting research on all companies or performing a comparison with other regions and countries. Second, the scoring activities to evaluate care ethics and ERM implementation may suffer from inherent flaws in terms of the subjectivity of the scorer as well as the inadequacy of the index measurement. Future studies can develop different measurements to assess care ethics and ERM practices and compare the results with this study. Another limitation is that it might be inadequate to assess the ethics of care and ERM implementation only from companies' disclosures as they might not represent the actual implementation. Future research can consider the use of other secondary data such as the disclosures in the company's website or analysis of the company's news in the mass media; or use primary data such as in-depth interviews or case study to complement the secondary data. An empirical study using experimental research can also be utilized to study the implications of care ethics on managers' empathic concern. Lastly, future research can also investigate the mediating role of care ethics through another channel other than ERM, such as CSR (corporate social responsibility) to know whether the ethics of care can induce a substantive CSR (instead of a symbolic one) and hence contribute to a better performance in terms of earnings stability.

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