Etikonomi
Volume 16 (2), October 2017
P-ISSN: 1412-8969; E-ISSN: 2461-0771
Page 173 - 186

Enterprise Risk Management Implementation Maturity in Non Bank and Financial Companies

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Abstract

Previous studies of Enterprise Risk Management (ERM) implementation mostly used dummy variable. Until today, studies that using risk management maturity, as real variable are limited. Therefore, this study intends to determine the maturity level of ERM implementation in non-financial companies listed on Indonesia Stock Exchange during period 2015 and influence of firm's total assets, total employee, leverage and public ownership to the ERM maturity. The method use are qualitative and multiple regression analysis. The result of data analysis showed that ERM implementation in selected sample during 2015 is still low (majority in initial and repeatable level). In addition, from determinant factors only total asset that have significant influence to the ERM maturity. This result implies that non-financial listed companies are vulnerable to risks. Management should consider future benefit of a mature ERM, not only to comply with regulation.

Keywords: enterprise risk management, financial companies, multiple regressions

Abstrak

Penelitian terdahulu mengenai penerapan ERM lebih banyak menggunakan variabel dummy untuk mengetahui hubungan ERM dengan variable yang mempengaruhinyai. Penelitian yang menggunakan maturitas manajemen risiko sebagai variabel penelitian masih terbatas. Penelitian ini ditujukan untuk mengetahui tingkat maturitas penerapan ERM perusahaan di luar sektor keuangan yang terdaftar di Bursa Efek Indonesia selama periode tahun 2015 sekaligus mengetahui pengaruh dari total asset, jumlah pegawai, leverage dan kepemilikan publik terhadap maturitas ERM. Metode analisis yang digunakan adalah kualitatif dan regresi linear berganda. Hasil analisis menunjukan bahwa tingkat maturitas penerapan ERM pada perusahaan yang terpilih menjadi sample selama tahun 2015 masih rendah (mayoritas berada di level initial dan repatable). Selain itu, dari beberapa faktor penentu hanya total asset yang berpengaruh secara signifikan terhadap maturitas ERM. Hal ini berimplikasi bahwa perusahaan terbuka di luar sektor keuangan rentan terhadap risiko. Manajemen sebaiknya mempertimbangkan manfaat masa depan dari ERM yang matang, tidak hanya sekedar untuk mematuhi peraturan.

Kata Kunci: pengelolaan risiko perusahaan, lembaga keuangan, regresi berganda.

Received: May, 26, 2017; Revised: June 19, 2017; Approved: July 10, 2017

DOI: 10.15408/etk.v16i2.5440

INTRODUCTION

In order to achieve their objectives, every creature must face and manage their risks, including company management. Learning from the history, risk management begins with effort to manage the impact arising from the pure risk in finance or hazard risk in the operational (Dionne, 2013; Simona-Lulia, 2014). In other word, in the earlier period of risk management, it focused only on the financial and operational risks. Increasing complexity of business and the government requirements regarding compliance with laws, several scandals and failures of the products occurring in several companies such as Toshiba, Ford, Samsung Galaxy Note, etc., have increased awareness of the risks and the importance of managing risks facing by the companies.

Traditional risk management is now considered inadequate to provide protection against the possibilities of risk that could occur in a company. Risk is now cross-border and not limited to just one unit or certain divisions. Management realizing that effective risk management can become major solution for the company's success. Therefore, now there is a tendency of paradigm shift from traditional risk management practices towards comprehensive risk management - known as Enterprise Risk Management.

Enterprise Risk Management (ERM) has become attention of academic study began around 1992. Some researchers believe the Enterprise Risk Management (ERM) have a significant impact for companies that implement it compared to the companies who do not apply it (Beasley, et.al, 2007; Maurer, 2009; Nugraha, 2011; Manab and Ghazali, 2013; Lechner and Gatzert, 2016).

Togok (2014) states that study in the field of Enterprise Risk Management usually classified into four groups: (1) Determinants of ERM implementation in the company, (2) The impact of ERM on the value and performance of the company or in any other aspect of a business; (3) Practical application of the ERM in the organization or company; (4) Role of personnel or the main function in the ERM.

In Indonesia, the ERM study has been done primarily to companies engaged in banking and financial institutions but study in companies engaged in sectors instead of banks and financial institutions is still limited. According to the AON Global survey in the year 2010 entitled "Enterprise Risk Management Survey 2010", the implementation of ERM in Indonesia companies are still low, when compared with other countries. ERM provides contribution to the company in the form of an increase in the value and performance of the company only if the implementation of ERM had been well established

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DOI: 10.15408/etk.v16i2.5440

and effective. To measure the effectiveness of the ERM implementation, researchers would require a measuring tool known as risk management maturity models (Enterprise Risk Management Maturity Model).

Previous studies of ERM implementation determinants often use dummy variable to predict the influence of those determinants to ERM implementation instead of using the risk management maturity tools (Razid and Golshan, 2012; Gordon, et.al, 2009). The study that discussed the risk management maturity are still limited. This happens because of lack of agreement from both academics and practitioners about the basic form of the *Risk Management Maturity Model* concept. Existing academic study on ERM tends more focused on the effect of the implementation of ERM on firm performance. It is difficult to get studies that evaluate the quality, or maturity ERM programs implemented by the company (Monda and Giorgino, 2013). In the other hand, practitioners develop concept according to their respective needs (Oliva, 2016).

Therefore, based on the fact above, through this study, the author is intended to (1) map the implementation maturity of risk management and (2) figure out the influence of determinant factors such as total asset, total employee, leverage, and public ownership on enterprise risk management maturity in in non-bank and financial companies listed on Indonesia Stock Exchange during 2015.

The distinctive characteristic of this study to the previous or similar study is the use of ERM maturity assessment tools to measure actual risk management implementation and not using dummy variables to determine the relationship between ERM with the influencing factors that determine its implementation.

METHOD

This study is mixed model research, which combines quantitative and qualitative data collection techniques and analysis procedures as well as combining quantitative and qualitative approaches at other phases of the research. Qualitative data in this study is the level maturity of ERM implementation while the quantitative data is calculation of total assets, total employee, leverage, composition of public ownership and multiple regressions.

The data used in this research is cross section data. Data were obtained from published annual reports of 100 non-bank and financial companies listed on Indonesia Stock Exchange selected as samples during the 2015. Samples were selected using

DOI: 10.15408/etk.v16i2.5440

purposive sampling methods using criteria (1) 50 samples were taken from list of companies under Kompas 100 and the remainder will be selected randomly to cover all sectors.

Qualitative analytical was performed through a set of checklist develop based on generally accepted framework [ISO 3100 (2009) and COSO (2016)]. There are 17 attributes (statements) used to figure out the level of company's risk management implementation maturity. For each statement being supported by information on annual report, the author will give score 1 and score 0 for unavailable information. The ERM maturity results calculated from the total of score obtained from each company selected as samples. The author also performs validity and reliability test to ensure objectivity, reliability and validity of gathered data.

Quantitative analytical was performed through multiple regression analysis. As discussed before, in this study, the author using ERM maturity instead of dummy variable. Therefore, to perform regression analysis total score of ERM maturity of each companies will be converted to interval data. Independent variables of this research are total assets, Total employee, leverage and public ownership while dependent variable is ERM maturity. The basic model can be formulated as follow:

ERM maturity= a+β1TA+ β2TE+ β3Lev+ β4PO+ e (1)

Where:

TA: Total Asset, TE: Total employee, Lev: Leverage, PO: Public Ownership

RESULT AND DISCUSSION

Samples of this study gathered from 100 non-bank and financial companies listed in Indonesia Stock Exchange. Indonesia Stock Exchange classifies companies under 9 sectors. However, this study cover only companies in 8 industry sectors, because bank and financial sectors industry is not part of this study. The samples composition from each sectors are presented in Table 1.

The author performs test of data validity using split half method and test of reliability using Pearson Conbrach Alpha. Validity and reliability test are used to ensure objective, valid and reliable data. The results of the validity test are presented in Table 2.

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DOI: 10.15408/etk.v16i2.5440

Table 1. List of Samples taken from 8 Industry Sector of Indonesia Stock Exchange

Sectors	Selected samples
Trade, Service and investment	26
Infrastructure, utilities and transportation	12
Mining	10
Agriculture	5
Property, Real Estate and Building	13
Other Industries	9
Basic Chemical Industry	15
Consumer Goods Industry	10
Total Samples	**100**

Table 2 test results show that the total assets, total employee, leverage and public ownership able to explain changes in the risk management maturity level (dependent variable) at 32.9% (R square) while the rests are explained by other variables outside the research variables. These conditions exist because until now there are several factors that might become determinants of ERM implementation and still unknown. ERM implementation is not straight forward as the conceptual appears (Nocco and Stultz, 2006). Furthermore, in this study, the author did not use dummy variable. The author refers to Razid and Golshan (2012) conclusion that dummy variable could not reflect real conditions of tested research object.

Table 2. Multiple Regresion Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.573a	0.329	0.300	0.233

Source: Output SPSS, (data processed)

The results of t test shown that total asset has significant value of 0. 000 with t value of 5.433. It means that Total Asset has significant and positive value to ERM maturity (See Table 3). This result is consistent with study performed by Beasley, et.al, (2007); Hamid and Hudin (2014); Yazid (2011) that corporations with large assets have a tendency to apply ERM over a smaller company based on the amount of its assets.

DOI: 10.15408/etk.v16i2.5440

Total employee has significant test value of 0.136 and t value of -1.503. This value under than its t table (1.98) or > α (0.05). From this result, we can make conclusion that in partial, total employee do not have influence to ERM maturity level. This condition is contrasts with Manab (2013) point of view that total employee have influence to ERM implementation; or research performed by Zadeh and Eskandari (2012) that stating that total employee had significant influence to the risks disclosure. This could be happened because Indonesia is labor intensive not capital intensive while the previous researchers perform their research in the developed countries. Moreover, employee in Indonesia majority is non-professional workers with elementary to senior high school education background.

Table 3. Result of t Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	beta		
Constant	-2.759	0.477		-5.778	0.000
Total Assets	0.107	0.020	0.591	5.433	0.000
Total employee	-0.033	0.022	-0.163	-1.503	0.136
Public Ownership	0.111	0.162	0.060	0.688	0.493
Leverage	0.116	0.107	0.101	0.1082	0.282

Source: Output SPSS, (data processed)

Leverage has significant test value of 0.282 with t value of 0.1082. This value is also under than its t table (1.98) or > α (0.05) (See Table 3). From this result, we can make conclusion that in partial, public ownership do not have influence to ERM maturity level. This condition also not supporting Subramaniam,et.al (2009) point of view, stating that if the leverage is high, then the level of risk faced by the company is also high therefore company will try managing their risks through ERM implementation; or research performed by Razid and Golshan (2012) regarding leverage as the influence factor of ERM implementation. This condition could happen because in fact, ERM is not well establish or implemented. Management do not have adequate experience and knowledge to mitigate leverage risk through ERM implementation.

The last variable, which is public ownership, has significant test value of 0.493 with t value of 0.688. From this result we can conclude that in partial, public ownership also do

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DOI: 10.15408/etk.v16i2.5440

not have influence to ERM maturity. This result is consistent with several researchers in Indonesia (Adam, et.al, 2016). In the other countries, public ownership can influence risk management. It done by placing a pressure to management while contrary in Indonesia, this condition is not applicable. This condition could happen because in Indonesia the owner of the public at large number consist of a small investors that do not have authority over financial and non-financial information desired and cannot affect the wide of disclosures (Adam, et.al, 2016).

Based on the results of multiple regression analysis in Table 3, the regression equation obtained is as follows:

ERM Maturity = -2.759 + 0.107 (Total Assets)- 0.33 (Total Employe)+0.111 (Public Ownwership +0.116 (Leverage)…….(2)

Equation above shows that (1) α=-2.759 This means that if all the independent variables have a value of zero (0) then the value of the ERM (dependent variable/Beta) is -2.759, (2) Total Asset's coefficient is 0.107, this mean that increase of Total asset will increase ERM value of 0.107, if the other variables still constant, (3) Total employee coefficient is -0.33, this indicate that total employee has inverse relationship with ERM. One unit increase of employee will decrease ERM value by 0.33, if other variables still constant, (4) Shareholder's coefficient is 0.11, this means that if other variables are constant, then increment of public ownership will also increase ERM value by 0.11, (5) Leverage's coefficient is 0.116, so that, increment of leverage value will increase ERM value by 0.116, if the other variables are constant.

In other word, ERM will not provide any value if the company does not have asset, employee, and leverage, public's ownership (independent variables have zero value). Increment of total asset, leverage, public ownership will increase ERM due to several reasons, for example company will try to mitigate financial risk due to high leverage by managing their cash flows or more public ownership will make companies have better corporate governance and risk management- as one of corporate governance component [OECD (2014)]. Increment of employee number will reduce ERM because human resources can become serious risks, especially in the absence of human resources management (Becker and Smidt, 2016).

DOI: 10.15408/etk.v16i2.5440

Table 4. The Overall Assessment Results of ERM Maturity in Selected Samples

No	Attribute Statement	Results	
		Yes	No
1.	Does company already create separate risk management function in organization structure?	33	67
2.	Does Company have clearly defined role and responsibility of the risk management function?	32	68
3.	Does company already create and have risk management committee?	25	75
4.	Does the risk management committee actively conducts discussions and reviews of issues related to the implementation of organizational risk management?	21	79
5.	Do appointed personnel have experience and knowledge in the daily implementation of risk management?	12	88
6.	Do the company's vision, mission and goals have supported risk awareness?	35	65
7.	Does the Company have operational risk management policies, procedures and standards?	30	70
8.	Does the Company provide risk-related training to all members of the organization and specifically to members of the risk management team?	12	88
9.	Does risk management become an integral part of the strategy-setting process and the organization's management?	22	78
10.	Do board of directors and board of commissioners show support to the implementation of risk management?	31	69
11.	Does the company have a clear risk management framework?	21	79
12.	Does the Company use quantitative methods in conducting risk assessments?	7	93
13.	Is there a clear relationship between the company's strategy with significant risks or risks in the risk register disclosed by the company?	17	83
14.	Are the risks identified comprehensive enough and cover all aspects (operational, financial, compliance and strategy?	15	85
15.	Does the Company have an internal audit function that implement risk-based audit?	26	74
16.	Do the risk profiles and identified risks have been routinely communicated to the risk management committee and the Board of Directors?	27	73
17.	Is there information about the risks facing by the company, in which information about the company's profile and or list of risks is always updated?	28	72

Source: Research data obtained from companies annual report

Committee Of Sponsoring Organizations of the Treadway Commission (COSO) in their latest COSO 2016 (COSO, 2016) defines ERM as the culture, capabilities and

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DOI: 10.15408/etk.v16i2.5440

practices integrated with the strategy and its implementation where companies rely on to manage risks in an effort to create, maintain and realize the value of the companies. Therefore, ERM should assist company to create, maintain and realize value no longer only to achieve company objectives (COSO, 2016). COSO and researchers belief that ERM provide values and benefits to the company (COSO, 2016); Hoyt, et.al, 2011; Lechner and Gatzert, 2016; Manab and Ghazali, 2013; Maurer, 2009).

To ensure benefit and optimization of ERM, company needs to evaluate their ERM practice because evaluation of ERM practice is an integral part of risk management [ISO 31000 (2009); COSO (2016)]. In other words, the evaluation is done to ensure compatibility between the implementation of the risk management objectives and strategy of the company. In accordance with COSO and ISO guidance, the author set 17 attributes (statement) to evaluate selected companies ERM practice and implementation maturity. The results are presented in Table 4.

The results of qualitative analysis show that majority of the tested sample- 67 companies (67% of 100 samples) - are at the initial level, 9% at the repeatable level, 9% at defined level, 13% at managed level and only 2 companies at the advance level. The summary of ERM maturity level based on the company sectors is presented in the Table 5.

Table 5. ERM Maturity Level Classification based on Score Obtained

Score	Maturity level
0.00 to 0.20	Initial
0.21 to 0.41	Repeatable
0.42 to 0.62	defined
0.63 to 0.83	Managed
0.84 to 1.00	Advance

Companies in initial level do not have adequate ERM practice; they only stating basic principle of risk management practice in their annual report to fulfill the requirement of regulation (Oliva, 2016; Chapman, 2011). These criteria suitable with the information obtained during the study. From the 17 attributes above, mostly companies do not have adequate information regarding their risk management. In addition, (1) there are 32 companies who own the same risk profile during 2014 and 2015 period; risk profiles are not updated. (2) 2 companies have identical risk even though they are a separate entity. Risk is dynamic in nature and no one will have the same risks with the others.

In repeatable level, companies begin to realize the risks that may be encountered. The companies try to implement principles of risk management tools and its

DOI: 10.15408/etk.v16i2.5440

methodologies. Risk management is created centrally and is characterized by lack of involvement of employees in general. In this level, ERM is implemented in inconsistency manner, repeated and reliance on selected people is relatively high (Oliva, 2016; Protiviti, 2006; Chapman, 2011). This statement consistent with the information obtained during study. From the samples, majority already try to identify their risk, however no companies provide training about risk management. In addition, most of companies do not have risk management framework, and no clear relation between risks and its strategies.

In defined level, ERM involvement in the company's business processes is quite high. There is a trend of companies increasingly applies the methods and techniques of risk management; Policies, processes and standards defined and institutionalized, Process uniformly applied across the organization (Oliva, 2016; Protiviti, 2006). From the samples and attributes tested, it can be known that in this level, companies already have risk management framework, there is policy and procedure in place. However, companies do not provide training, some of risks still not yet covered (especially strategic risks), and still using qualitative approach rather than quantitative.

Table 6. ERM Maturity Level Based on Company Sectors

Sector	Total samples	ERM Maturity level				
		Initial	Repeatable	Defined	Managed	Advance
Trade, Service and investment	26	23	0	2	1	0
Infrastructure, utilities and transportation	12	7	0	1	3	1
Mining	10	0	2	2	5	1
Agriculture	5	2	3	0	0	0
Property, Real Estate and Building	13	8	2	3	0	0
Other Industries	9	9	0	0	0	0
Basic Chemical Industry	15	12	0	1	2	0
Consumer Goods Industry	10	6	2	0	2	0
Total Samples	**100**	**67**	**9**	**9**	**13**	**2**

Companies in managed level characteristic are: (1) company awareness regarding the risk management and business processes is very high. (2) ERM is decentralized. (3) Communication is an important part and integrated in the application of risk management. (4) All employees have been actively involved in risk management. (5) Risks

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DOI: 10.15408/etk.v16i2.5440

measured/managed quantitatively and aggregated enterprise wise, (6) The benefits of risk management are understood by all levels within the company even though the benefits are not always achieved consistently (Olivia, 2016; Protiviti, 2006; Chapman, 2011). These characteristic consistent with assessment result. Companies already have using quantitative approach, and consider providing training to all staff and management. However, some companies show that people appointed in risk management function do not have adequate experience in handling risk management and some risks are not covered (especially strategic risks).

Advanced level characterized by: (1) ERM strategies in an organized, open and continuous. (2) Company extensively try developing their risk management practices,(3) Risk information is actively used to improve business processes and treated as source of competitive advantage, (4) Risk management process used to managed opportunities also its potentially negative impact, (5) knowledge accumulated and shared. (Protiviti, 2006; Chapman, 2011; Oliva, 2016). The assessment results of this study confirm this characteristic. From sector point of view, only mining sector that shown sound risk management maturity (1 company of total 10 selected samples in advanced level, 5 companies in the managed level, 2 companies in the defined level and 2 companies in repeatable level-no company in initial level). This condition happened because mining industry facing complex risks and tight regulations. The other sector varies from initial to managed level.

CONCLUSION

The results showed that the risk management maturity level the majority of non-banks and financial companies listed in Indonesia Stock Exchange are still low (initial to repeatable level). Several company annual reports show the same risks over several periods or a company's risk profile, which exactly matches with the other company's risk profile. Thus there is a possibility (1) The risk is not managed properly, (2) the company management display insufficient data only to meet reporting requirements required by Financial Service Authority (OJK). Only mining sector that shown sound risk management practice due to the process complexity and tight regulation.

In Indonesia, total asset plays significant influence as determinant of ERM maturity. The other factors such as leverage, total employee or public ownership-individually do not have significant influence to ERM maturity level. These conditions due

DOI: 10.15408/etk.v16i2.5440

to Indonesia business circumstance that different with other countries, especially developed countries-where the previous research was conducted. The practical and management implication of this condition (low level ERM maturity) is companies are vulnerable to the risks (especially from strategic risks). Mitigation of strategic risks plays significant effort to company going concern and ability to create value. Therefore through this study, the author recommends that company should consider strengthening and implementing ERM as part of the company's strategic management. ERM could assist management reducing uncertainties in the future. The implementation of ERM should be viewed as an investment in the future rather than look at it as a cost.

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