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The Impact of Risk Management on Firm Performance

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***Abstract*— The aim of this paper is to investigate whether the relationship between risk management and firm performance. Risk disclosure and leverage are the measurements of risk management. Tobin's Q is proxy for firm performance. This study use panel data from 36 listed companies during 11 years from the period 2007 to 2017 with 396 observations. The result from the STATA program is shown that risk disclosure has significant impact on Tobin's Q. Leverage has a Positive correlation on Tobin's Q. Both the variables of risk management have a relationship to increase firm performance.**

Keywords—Firm Performance, Tobin's Q, leverage, risk disclosure

I. INTRODUCTION

Business will not be separated from a risk. Risk reporting give the information relate to the accounting policies including risk management. Risk management is the most important thing that must be managed properly thus that it can reduce risk. In the annual report of a company, accurate information is presented on the condition of a business including risk management. The company have good manage of risk will be influence the profitability through planning properly. Moreover, risk management is necessary to get the goal company profitability as the same with the planning from the company [7]. Risk disclosure and leverage become variables proxies for risk management. Risk disclosure gives information on financial statements relates to the uncertainties of business. Leverage refers to the ratio of debt, which could encourage a firm's productivity, leading to increased profitability.

Literature Reviews

Theory economies have a variety of approaches, including agency theory, the political cost theory, signalling and property, cost theory [8]. Risk management relates to the Signalling theory to predict the sustainability of a company in the future. Risk management can be interpreted as a process of avoiding the process of negative events that exist in company activities so that goals can be achieved [3]. Thus, the companies could minimize of risk using the instrument [1]. Moreover, risk management refer to reducing uncertain of the

firm, thus less negative of risk [3]. The company have good risk management could increasing the profitability of the firm [10]. The performance of the company depends on risk management [3]. This implies that the company which have good management of risk; thus, the operating activities will be under control. As a result the negative impact on the event will be avoided. Enter price risk management (ERM) is essential for the company to increase the firm value [9]. Moreover, the ERM framework makes the good of a reputation as a result improving the firm reputation [4]. ERM could provide good control on financial reports and may help reducing costs therefore increasing company value [14]. The effective on managing risk could avoid bankruptcy through the efficiency cost of capital as a result improving firm performance [2]. Moreover, risk management creates the efficiency cost of management leading to increase company value [15]. This implies the company has good managing of risk could maintain a cash flow more stable and create the investor confident. Risk disclosure and leverage part from risk management. Risk disclosure is the financial instrument to increase the quality of the financial company. The instrument of risk disclosure has three elements which are: credit risk, liquidity risk and market risk [21]. Leverage relates to a financial ratio that presents the size of debt for cost

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productivity in the firm. The measurement used to measure using debt on the firm their investment.

Leverage could increase stock prices because of the reducing the cost and the payment of taxes decrease. Risk disclosure has important for the company information due to the investor being more effective [20]. Leverage becomes the attention for the company information. The availability of debt presents the information condition of financial company and the prediction in the future. How the company could be paid liability from the operating of firm. Leverage as the ratio of debt has two predictions for the companies. The company has high leverage, and it is possibility difficult to pay the cost of capital. However, a company with low leverage could pay the cost of operating, thus improving profitability [22]. Moreover, the relationship between leverage and firm performance on Nigeria companies has significant negative [23]. It indicates the result consistent with the agency cost theory.

II. RESEARCH METHOD

This research investigates the relationship between risk management and firm performance. Therefore breakdown the hypotheses are H1 is risk disclosure has a positive impact on firm performance and the hypothesis2 (H2) is Leverage has a positive correlation on firm performance

Data in this research was collected from 36 companies has been listed in the Indonesian Stock exchange. Data started from 2007 until 2017 with 396 observations, to analysis data used STATA program. The dependent variable in this study used Tobin's Q as proxy by firm performance. The Independent variable is risk management which using two measurements which are risk disclosure and leverage.

Tobin's Q measure is calculated by **(**Equity market value + Liabilities book value)/(Equity book value + Liabilities book value). Meanwhile, the instrument risk disclosure index under the financial report standard (IFRS) included 12 indicators. Each indicator has score 1 thus the total score is 12. The elements of indicators from the company which are: First is company has method of measuring credit risk exposure. Second, is that company has adequate description of how credit risk management occurs, including providing a clear link between quantitative data and qualitative description. Third, relate to the company has maximum credit exposure. Fourth, is that the company has an ageing schedule for past due amounts. Fifth, indicator is company has Maturity analysis derivative liabilities. Sixth, indicator is the company provided Sensitivity analysis. Seventh, indicator is Impairment method and inputs disclosed. Eighth, indicator is Description of the extent of financial effect of collateral and other credit enhancement. Ninth, the company has Maturity analysis derivative liabilities due. Tenth, indicator is disclosure of the exposure market risk. Eleventh, indicator is the company has sensitivity analysis for market risk. Twelfth, is the company has counterparty concentration profile. Based on the indicators that the company has indicator give value score 1, on the other hand if company doesn't have indicator of risk disclosure the value is 0. The score value on the company depends how many indicator the company has. If company has all indicators it means the score for risk disclosure total is 12.

Other independent variable is Leverage. The essential of financial ratio on the firm is leverage because to measure the debt of finance on the investment. The company has greater ratio of leverage indicate that the company possibility bankruptcy.

Control variable this research are use Industry sector and size.

TABLE I. SUMMARY STATISTIC OF DEPENDENT VARIABLE AND INDEPENDENT VARIABLES

Variables	Mean	Min	Max	Std. Dev.
Tobin's Q	3.007669	.0035	19.6208	3.145833
RD	6.217172	1	.3452	.0844883
LEV	.6870783	.2162	1.1529	.2084831
SIZE	3.872566	2.4297	5.4592	.7346763
IND	0.6111111	0	1	.4881147

[a.] Note: The table presents the summary statistics of the variables used in the regression analysis

The econometric model is testing the correlation of risk management on firm performance. as presented below:

$$FP_t = \alpha + RD_{it} + LEV_{it} + \beta_{11} SIZE_{it} + \beta_{12} IND_{it} + U_{it}$$

FP refers to a measure proxy by Tobin's Q; RD is represented by risk disclosure, LEV is presented by leverage, total asset of firm presented by SIZE; and IND is the industry sector, categorised as Finance and Non-finance Company. Lastly, U refers to term error.

III. FINDING RESULTS

3.1 Pooled Least Square

The Pooled Least Square estimation for the regression results focuses on the correlation ofrisk management toward firm performance, as presented in Table II. The model performs reasonably inappropriately when the p value (Prob.> F) < Alpha 0.05, which indicates the Pooled Least Square model should be not suitable. As the results are needed to choose the other models weather fixed effect model or random effect model.

TABLE II. POOLED LEAST SQUARE ESTIMATION FOR RISK MANAGEMENT AND TOBIN'S Q

Variable	Coefficient	Std. Dev.	t-test Statistics	Probability
RD	-.3679493	.0627091	-5.87	0.000
LEV	8.070766	.7066884	11.42	0.000
SIZE	-1.370249	.1796149	-7.63	0.000
IND	-2.870605	.3476182	-8.26	0.000
Cons Observation	6.810283	.95444	7.14	0.000

R-Square = 0.3982
F-Statistic = 64.67
Prob. (F-Statistic) = 0.000

Based on Table II, risk disclosure (RD) has the coefficient -.3679493and a significant relationship with Tobin's Q. Leverage (LEV) has the coefficient 8.070766 .Meanwhile, firm size as the control variable has the coefficients of -1.370249 and industry sector has the coefficients of -2.870605. However, in spite of the rejection of the Pooled Least Square model the fixed effect estimator was found to be useful as an estimator of the coefficient in the regression model.

3.2 Random Effect Model

TABLE III. RISK MANAGEMENT AND FIRM PERFORMANCE (TOBIN'S Q), RANDOM EFFECT MODEL

Variable	Coefficient	Std. Dev.	t-test Statistics	Probability
RD	-.3252976	.1536917	-2.12	0.034
LEV	7.407441	1.311316	5.63	.0.000
SIZE	-2.208816	.2383068	-9.27	0.000
IND	-3.172536	.9597624	-3.31	0.001
Cons Observation	10.43255	1.830244	5.70	0.000

R-Square = 0.3776
Wald chi2(4) = 134,09
Prob. (F-Statistic) = 0.000

Table III shown that risk disclosure (RD) has the coefficient -.3252976 which has relationship to influence of Tobin's Q. Moreover, leverage has results of coefficient is 7.407441 and statistically significant toward Tobin's Q. Meanwhile, the control variable of size has the coefficients is -2.208816. industry sector has the coefficients of -3.172536 which have correlation on Tobin's Q.

3.3 Fixed Effect Model

TABLE IV. RISK MANAGEMENT AND FIRM PERFORMANCE (TOBIN'S Q) , FIXED EFFECT MODEL

Variable	Coefficient	Std. Dev.	t-test Statistics	Probability
RD	-.3438254	.3560183	-0.97	0.335
LEV	7.144171	1.691038	4.22	.0.000
SIZE	-2.427526	.2622454	-9.26	0.000
IND	0	Omitted	0	0
Cons Observation	9.636758	2.756096	3.50	0.000

R-Square = 0.1841
F-Statistic = 37,25
Prob. (F-Statistic) = 0.000

Based on Table IV shown, the coefficient of risk disclosure (RD) is -.3438254 and has no significant impact on Tobin's Q. On the other hand, leverage has a statically positive impact on Tobin's Q with coefficient is 7.144171. Size has the coefficients of -2.427526 and has relationship with Tobin's Q. However, an industry sector is omitted.

It is presented in Table IV and Table V to determine the appropriate model for the panel data regression used the Hausman test. Based on Table VI, test the determinant of correlation has results of the null hypothesis indicate the model random effect is more appropriate.

3.4 Post Estimate Test

Using the Hausman test, the random effects model was compared to the fixed effects models, the results of which are shown in Table V. Results indicate that the fixed effects model was inconsistent compared to the random effect model.

TABLE V. HAUSMAN TEST OF THE REGRESSION MODEL (TOBIN'S Q)

Variable	Coefficients		Difference (b-B)	sqrt (diag(V_b-V_B)
	b (fixed)	B (random)		
RD	-.0086072	-.0164801	.0078729	.0077636
LEV	.2821794	.1917352	.0904442	.0220556
SIZE	.0160423	.0137175	.0023249	.0019039

Notes: b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
chi2(11) = (b–B)'[(V_b–V_B)^(–1)](b–B) = 17.54
Prob>chi2 = 0.0005

Refers to table V, the Hausman test results on regression have a Prob < chi2 resulting in 0.0005. It indicates that the Prob. > chi2 is larger than 0.05 or 5 per cent. Therefore, it appears that the random effect model more appropriate compare to the fixed effect model.

3.5 Discussion of Findings

As presented from table III the finding results the hypothesis 1 that risk disclosure has significant impact on Tobin's Q has accepted. Conversely, the result has negative on coefficient it is implies that the company give more detail relate risk disclosure possibility the value of Tobin's Q decrease. It indicates that in Indonesian companies risk disclosure is not considered as value driver to make investor confident. The World Bank (2010) found that corporate governance in Indonesian companies inadequate the information of disclosure as the results the quality of risk disclosure become lower in the financial report. It mean that the companies have low disclosure quality become lower the investor confidence. Risk disclosure becomes the essential information for the investor and stockholder on prediction the going concern of the firm. This results support prior study that the information from risk disclosure on financial statement create the stakeholder more confident leading to increase firm performance [5].

Moreover, risk disclosure gives information more transparency on the annual report as the results and the decision making will be proper, thus increasing firm performance [11]. It indicates risk disclosure create the investor's reliability due to provide a corporate risk profile. A company that has good financial report may help improve risk disclosure as the results improving firm performance [6]. Moreover, the indicators of risk disclosure based on standards which indicators from the international financial reporting standard (IFRS) has correlation positive increasing the quality of firm performance [12].

The other variable from risk management is leverage. Hypothesis 2 is accepted, shown that leverage has statically significant to increasing form performance. Leverage correlation to increase firm value because of the debt makes optimum leverage increase firm [13]. Based on the results, it concluded that risk management is the essential element to increase firm performance. Moreover, risk management could reduce of financial distress of a firm. Thus, companies have planning and investment strategies to reduce costs and create upgrades to maximise capital and better ownership structure [15]. Risk management could avoid corporate collapse through efficiency from managing cost, as a consequence improving company performance [15]. Moreover, these results support the prior study that managing risk management could reduce costs and taxes [18]. Furthermore, risk management could influence the investor more trust in making decisions due to avoiding the uncertain firm.

IV. CONCLUSION

Risk management is a crucial issue for the firm. Managing risk is the reflection of the company transparency will impact the decision of investors, leading to increasing firm performance. This result is consistent with signalling theory; risk management is one of the elements to improving firm performance. The company that has an annual report with complete risk management reflects that the company is more accountable and transparent. The external parties such as investors and stockholders need the information accurate and accountable to make the decision. Moreover, the effectiveness of risk management could reduce the cost of financial distress and taxes as the results increase firm value. As discussed above can be summary that risk disclosure and leverage the value driver to increase firm performance use measure of Tobin's Q.

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