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THE IMPACT OF FINANCIAL DISTRESS, STABILITY, AND LIQUIDITY ON THE LIKELIHOOD OF FINANCIAL STATEMENT FRAUD

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ABSTRACT
This study aimed to identify how financial distress and financial stability give impact to the likelihood of financial statement fraud. Samples used in this study were Indonesian banking corporations listed in Indonesia capital market. The authors used liquidity as a moderating variable to test whether it strengthened or weakened the impact of financial distress and financial stability to the likelihood of financial statement fraud. This study was designed as a quantitative study that used logistic regression and path analyses to test the hypotheses. The results showed that financial distress, financial stability, and liquidity had significant effect on the likelihood of financial statement fraud. Moreover, liquidity was found to strengthen the impact of both financial distress and financial stability and it had a role as a quasi-moderator for the likelihood of financial statement fraud.

INTRODUCTION
Financial statement fraud is still a popular topic among authors. Despite of the existence of various regulations to prevent frauds as well as studies to uncover frauds, there are still a high number of fraud cases in various business areas. The most well-known case of fraud occurred in 2001, when there was a disclosure of the manipulated financial statements by Enron, which had caused a large economic loss both for the society and the government. Other infamous financial fraud cases included the cases of Worldcom, Parmalat, Crazy Eddie, etc.

In Indonesia, there have been plenty of fraud cases. In 1997, there was a huge financial crisis in Indonesia that lead to financial distress for companies and massive frauds conducted by firms. Sarita, Zandi & Shahabi (2012) reported 16 banks went bankrupt due to the liquidity problems they

faced because of the financial crisis. Djiwandono (2002) stated that the central bank of Indonesia gave funding to help the banks to fight against their liquidity problems. The Supreme Audit Agency, or known as BPK in Indonesia, investigated the appropriateness of the use of the fund and found that the receiving banks abused the fund with the estimated loss of around IDR 138.4 trillion or 95.7 percent of the total liquidity support given by the central bank. The occurrence of financial fraud is limited during an economic crisis. For example, PT. Kimia Farma Tbk in 2001 was found to cook the book to inflate its inventory. Also in 2016, 42 fraud cases of 221 cases were reported to happen in Indonesia. During that period, Indonesia was the second country after China with the largest number of fraud cases in Asia Pacific (Ernest & Young, 2017). These cases provided a reflection that there are still many things to be done to prevent and to reveal financial frauds. Auditors and investors should be aware of potential threats of financial statement fraud. Aziz, Mohamed, Hasnan, Sulaiman & Aziz (2017) also noted that restatement of a financial statement based on auditors' suggestions happens in many auditing cases. A restatement might be a preliminary indicator of fraud attempts.

Based on Fraud Diamonds, there are four main drivers of a fraud namely pressure, opportunity, rationalization, and capabilities (Wolfe and Hermanson, 2004). Abdullahi and Mansor (2015) explained that when an organization suffers acute financial problems and has the opportunities to conceal it, they tend to engage in 'creative' accounting schemes that lead to financial statement fraud. Association of Certified Fraud Examiner (ACFE, 2016) noted that, among the three classifications of fraud, asset inappropriateness is the most popular case. It occurs in more than 83% of fraud cases with the median loss of $125,000. Corruption is number two in the list with 34.5% cases with the median loss of $200.000. Financial statement fraud, on the other hand, counts only less than 10% in overall fraud cases, but surprisingly, the median loss is the highest, which is $975.000. Fraud cases are found in various industrial sectors, with the highest in banking and financial services as well as manufacturing sector.

This study identified the effects of financial distress, stability, and liquidity in the detection of fraudulent financial report. It was found that financial distress and financial stability had positive impacts on the likelihood of financial statement fraud (Handoko, 2015). Liquidity was also found to strengthen the impacts of both financial distress and financial stability on the likelihood of financial statement fraud.

LITERATURE REVIEW

The Grand Theory

Studies on financial fraud mainly rest their foundation on the agency theory and the stewardship theory. The agency theory by Jensen and Meckling (1976) explained the relationship between the principal, the equity owner (shareholders in public corporation), the agent, and the management of the corporation. The equity owners want to maximize their wealth, while the management wants to show their work performance to claim their rewards, such as salary raise, bonus, options, etc. Financial statement plays the role of media communication between the investor and the management. When

the management's interest does not align with shareholders' interest, it provides justification for management to seek their own interest through misuse of their given trust (Albrecht, Albrecht & Albrecht, 2004). At the same time, the management may trick the owners by putting false claims of the performance in the financial statement.

The stewardship theory is based on psychology and sociology approaches as opposed to economics approach. This theory explains that the management assumes a role as a steward to a corporation. The Management tries to show their best performance to impress their shareholders to get acknowledgment as their psychological needs fulfillment (Donaldson and Davis, 1991). Accordingly, when the financial results are lower than the expectation, the management may alter the financial report to make it look better to maintain their reputation as excellent performers.

Financial Statement Fraud

Beneish's (1999) model was used in this study to detect the potential financial statement fraud. Beneish M Score, a mathematical model named after Professor Messod D. Beneish, provides a measurement for a possibility of financial fraud or earning management. The score is composed of eight variables (Aris, Arif, Othman & Zain, 2015) as stated below. A company that has M score value greater than (or lower than) -2.2 are identified as having (or not having) potential fraudulent financial statement. The possibility for the fraudulent financial statement, thus, is measured using dichotomous variables, such that a company that has potential fraudulent statement will be given category score 1, while a company that has no potential fraudulent statement is given the score 0. The equation for constructing M Score is as follows:

$$\text{M score} = -4.84 + 0.92\ \text{DSRI} + 0.528\ \text{GMI} + 0.404\ \text{AQI} + 0.892\ \text{SGI} + 0.115\ \text{DEPI} - 0.172\ \text{SGAI} + 4.679\ \text{TATA} - 0.327\ \text{LVG}$$

Where,

DSRI = *Days Sales in Receivables Index*
GMI = *Gross margin Index*
AQI = *Asset quality Index*
SGI = *Sales growth Index*
DEPI = *Depreciation Index*
SGAI = *Sales General and Administrative Expenses Index*
LEVI = *Leverage Index*
TATA = *Total Accrual to Total Assets*

Liquidity

Financial analysts usually use liquidity to measures the healthiness of a company. Liquidity is often used as a parameter for ongoing concerns and opinions found by the external auditor to determine the possibility of survival of a company in the near future. The financial auditor needs to add ongoing concern and opinion in the explanatory paragraph of the auditor's independent report to give a whole explanation to investors or potential investors. This is similar to a doctor who gives certification of health to a patient that came for a medical checkup. It is crucial for companies to

maintain their liquidity ratio to preserve its ability to cover its current liabilities with its current asset (Kirkham, 2012). In this study, liquidity is measured using an acid test ratio. Kirkham (2012) used an acid test ratio as one of the ratios for liquidity analysis. The formula for acid test ratio is as follows:

$$\text{Acid test ratio: } \frac{\text{(Current asset – inventory – prepaid payment)}}{\text{Current liabilities}}$$

Financial Distress

Financial distress is the situation that is faced by companies when they suffer financial pressure, such as poor performance, loss in income statement for some period, and they had to struggle to pay their debt. Companies that experience distress have suffered a decrease in equity, as a result of continuous losses, and sometimes cash shortage; because it has been used up for operating expenses (Campbell, Jens & Jan, 2011). Memba and Job (2013) explained financial distress as liquidation threat, where a firm is unable to pay short-term liabilities to its creditor and to pay the interests for bonds as well as preferred dividends. Memba and Job (2013) mentioned several causes for financial distress: failed business strategies, mismanagement of asset, and wrong prediction of business opportunities. In this study, financial distress was measured using Altman Z Score. This is a model found by Altman (1968) that fit for manufacturing company, while our research object was finance company, so we used Z score for service companies (Pradhan, 2014). The equation is as follows:

$$Z_i = 6.56WCA_i + 3.26REA_i + 6.72EBITA_i + 1.05MCL_i$$

Where:

WCA_i = *Working Capital/Total Asset of firm i*

REA_i = *Retained Earning/Total Asset*

$EBITDA_i$ = *Earnings before Interest and Taxes/Total Asset*

MCL_i = *Market Capitalization/Total liability*

The interpretation of Z_i score is as follows:

$Z_i < 1.10$ = corporate is in safe zone

$1.10 > Z_i > 2.60$ = corporate is in grey zone

$Z_i > 2.60$ = corporate is in danger zone

Financial Stability

A company usually tries to maintain and monitor their financial stability continuously. An unstable condition of the company will put pressure on the management due to the decrease in company performance that hampers the flow of investment fund in the future. An unstable company cannot maximize the productivity of its assets and it is unable to use the source of investment fund efficiently (Campbell et al., 2011).

Skousen, Smith & Wright (2008) stated that management faces pressures to commit fraud and manipulation of financial statements when financial stability and profitability of their companies are threatened by the worsening condition in the economy, industry, and other factors. Skousen et al. (2008) stated that the higher the change or increase of total asset ratio in a company, the higher the probability of financial statement fraud to occur in that company. In this study, we used change in total asset ratio (ACHANGE) as a proxy for financial stability. ACHANGE formula is stated as follows:

$$\text{ACHANGE: } \frac{\text{Total Asset}_{(t)} - \text{Total Asset}_{(t-1)}}{\text{Total Asset}_{(t-1)}}$$

MATERIALS AND METHODS

Population and Sample

This study is a quantitative causal study. We conducted research to test the impact of financial distress and financial stability on financial statement fraud. Moreover, we also tested liquidity as a moderating variable in the relationship. This research used secondary data that was acquired from financial statement of the public corporation listed in Indonesia Stock Exchange (IDX). The Population of this study was corporations in the banking sector that listed and published their audited financial statement completely in Indonesia. There were 43 banking corporations that were listed in Indonesia Stock Exchange. Companies were included in the final sample list if they were listed continuously from 2012 to 2016 and completely published the fiscal year audit results of their financial statement. The total number of final sample was 150 firm-year observations, taken from 30 banks that met the criteria and then multiplied by 5 years (2012 – 2016).

Data Analysis Method

This research used path analysis to determine direct and indirect impact of the independent variables to dependent variable. The direct impact was calculated from the impact of each independent variable on the dependent variable. The Independent variables of this research were financial distress and financial stability, while the dependent variable was the likelihood of financial statement fraud. The indirect impact was resulted from a moderating variable that influenced the strength of the relationship between the independent and dependent variables. The Moderating variable in this research was liquidity.

Hypothesis Development

There were five hypotheses tested in this research. Each hypothesis would provide the conclusion on the impact that the independent variable gave to the dependent variable and how the moderating variable strengthened or weakened the impacts.

A previous study by Lou and Wang (2011) used data from Taiwanese public corporation in trading sector and it concluded that financial distress had a positive impact on detection of financial statement fraud. Using discrete-time survival analysis, they found new evidence that not only in the initial period but also in the later period that financial distress had an impact on financial fraud disclosure. Another study by Manzaneque, Priego & Merino (2016) used companies listed in Spain from 2007 to 2012. They stated that financial distress had no impact on financial fraud because of lack of incentive to hold back the financial distress. Incentive/pressure was one of the factors in the fraud triangle that resulted in fraud as stated by Roggeveen (2009). Everyone can resort to financial statement fraud when there is an incentive to do so. The first hypothesis was as follows:

H1: financial distress has a positive impact on the likelihood of financial statement fraud.

A previous study conducted by Beneish (1999) found that a company with high level of debt suffered financial instability that lead to a higher likelihood and magnitude of fraudulent financial statement. Therefore, the second hypothesis was as follows:

H2: financial stability has a positive impact on the likelihood of financial statement fraud

In this study, liquidity was placed as a moderating variable whose impact was tested on how it strengthened or weakened the impacts of financial distress and stability on financial statement fraud activities. Kirkos, Spathis, & Manolopoulos (2007) stated that liquidity strengthened the impact of financial distress on detection of financial statement fraud. It increases the probability of manipulating schemes such as overstating asset and understating liabilities. The third hypothesis is as follows:

H3: liquidity strengthens the positive relationship of financial distress with the likelihood of financial statement fraud

A previous study conducted by Kim (2009) in Korean banking industry resulted in a conclusion that liquidity strengthened the impact of financial stability on financial statement fraud. When a company is experiencing liquidity problems, they are usually in a situation where they have short-term debt with close maturity, and this condition becomes pressure and financial distress for them. The fourth hypothesis is as follows:

H4: liquidity strengthens the positive relationship between financial stability and the likelihood of financial statement fraud.

A research by Bachev (2012) stated that a problem in liquidity would increase the desire from the corporation's top management to commit financial statement fraud. Similarly, Ozcan (2016) stated that a corporate with low liquidity was more likely to have financial statement fraud. When companies experience liquidity problems, they seek to obtain funds for their short-term liabilities. This becomes a pressure for them to do financial statement fraud. The fifth hypothesis is as follows:

H5: liquidity has a positive impact on the likelihood of financial statement fraud.

RESULTS AND DISCUSSIONS

This research used path analysis binary logistic regression to test the hypothesis since one of the variables was a dichotomous variable.

Overall Model Fit

Overall model fit was used to test the logistic regression equation model obtained to be used in predicting income smoothing (code = 1) and no income smoothing (code = 0).

This test was done by comparing the value between -2 Log Likelihood in the initial block (block 0), with the value of Log-Likelihood (in block 1). The Likelihood Log value of the initial block (block 0) is shown in the Iteration table (a, b, c), while the Likelihood Log-2 block is seen in the Iteration table (a, b, c, d). If there was a decline in value between -2 Log Likelihood block 0 and -2 Log Likelihood in block1, it meant that the hypothesis model corresponded to the data.

Table 1 : *Overall Model Fit* Iteration history[abc]

Iteration	-2 log likelihood	Coefficients

		Constant
Step 0	**1**	78.667	0.375
	2	78.667	0.362
	3	78.667	0.362

Iteration history[abcd]

Iteration	**-2 log likelihood**	**Coefficients**			
		Constant	FD	FS	LQ
Step 0	**1**	64.563	0.303	0.563	0.782	0.521
	2	63.286	0.512	0.776	0.814	0.641
	3	62.105	0.573	0.728	0.982	0.694
	4	62.105	0.571	0.632	0.921	0.702
	5	62.105	0.571	0.632	0.921	0.702

In Table 1, we can see that X1 represents the first independent variable: financial distress, X2 represents the second independent variable: financial stability and Z represents moderating variable liquidity. Table 1 shows the feasibility test by considering the number at the beginning of -2LL (-2 Log Likelihood) Block Number = 0, which was equal to 78.667, and the number in -2LL (-2 Log Likelihood) Block Number = 1, amounted to 64.563. This value indicated a decline in the value of -2LL (-2 Log Likelihood) in Block 0 and Block 1 of 14.164; thus the regression model was deemed as appropriate to be used to analyze the data. The decline occurred because of the addition of independent variables (financial distress and financial stability) and moderating variable (liquidity) that had improved the model. This result showed that the regression model fit with the data.

Goodness of Fit Test

The purpose of the goodness of fit test is to determine whether the probability distribution of the hypothesis can be used as a model for a particular population. This regression model is measured by the chi-square of the Hosmer and Lemeshow test. The following table shows the result of Hosmer and Lemeshow's Goodness of Fit Tests.

Table 2. : *Hosmer and Lemeshow's goodness of fit test*

Step	**Chi-square**	**Df**	**.sig**
1	11.291	8	0.277

Table 2 shows that the statistical value of Hosmer and Lemeshow Goodness of Fit is 11,291 with probability significance 0.277, where since 0.277 > 0.05 then H_0 could not be rejected. The regression model used in this study was deemed feasible for further analysis because there was no significant difference between the predicted classification and the observed classification.

Hypothesis Testing

Data analysis in this research was conducted using logistic regression. Logistic regression was used to test whether independent and moderating variables had a positive impact on the financial statement fraud detection. The value of Nagelkerke R Square in the Model Summary was used to determine the accuracy of the model as expressed by the percentages of the dependent variable that could be explained by the independent variables. The value is shown in Table 3 below:

Table 3. :*Model Summary*

Step	-2 Log Likelihood	Cox & Snell R Square	Nagelkerke R Square
1	62.105	.561	.602

Based on Table 3, the value of Cox & Snell R Square is 0.561 and value of Nagelkerke R Square is 0.602. The value of Nagelkerke R Square of 0.602 indicated that the independent and moderating variables were able to explain the variation of the dependent variable (detection of financial statement fraud) of 60.2%, while the remaining 39.8% was explained by other variables not included in this model.

In order to test the hypothesis, we used logistic regression. The results are presented in Table 4 below:

Table 4. : *Variables in Equation*

Step 1		Coefficient	S.E.	Wald	Sig
	FD	.751	.276	1.342	.005
	FS	2.542	1.275	2.887	.001
	LQ	1.021	.564	6.103	.000
	FD & LQ	1.521	.719	3.871	.000
	FS & LQ	3.021	2.215	2.379	.000
	Constant	.572	.531	1.443	.203

According to Table 4, the significant value for FD (financial distress) is 0.005 and FS (financial stability) is 0.001. Both values were lower than 0.05, so the conclusion was that financial distress and financial stability had a positive impact on the detection of financial statement fraud; thus, the hypothesis H1 and H2 could not be rejected since the significant value was less than 0.05.

The significant value of LQ – liquidity interaction with FD was 0.000, which was lower than 0.05, so we concluded that liquidity strengthened the impact of financial distress on the detection of financial statement fraud. Based on this result, the hypothesis H3 could not be rejected since the significant value was less than 0.05.

Significant value of interaction of LQ and FS was 0.000, which was lower than 0.05, so we concluded that liquidity strengthened the impact of financial stability on detection of financial statement fraud. Based on this result, the hypothesis H4 could not be rejected since the significant value was less than 0.05.

Significant value for LQ - liquidity was 0.000, lower than 0.05, so we concluded that liquidity had a positive impact on the detection of financial statement fraud, thus hypothesis H5 could not be rejected. Based on this result, liquidity was stated as quasi-moderator, a variable that moderates the relationship between an independent variable and a dependent variable, which also becomes an independent variable.

Test results showed that financial distress and financial stability both had significance value of 0.005 and 0.001 and the values were lower than 0.05, so H1 and H2 could not be rejected; thus, financial distress and stability were shown to have an influence on the fraudulent financial statement. Companies that are experiencing financial difficulties (financial distress) are in the condition of bankruptcy. These results are consistent with the previous studies conducted by Lou and Wang (2011) and Beneish (1999).

Liquidity as a moderating variable increased the coefficient of both financial distress (from 0.751 to 1.521) and financial stability (from 2.542 to 3.021). These coefficients were statistically significant because the p-values of all coefficients for interactions between liquidity and financial distress and between liquidity and financial stability were 0.000. Based on this result, H3 and H4 could not be rejected; thus, liquidity could strengthen the influence of both financial distress and financial stability on the likelihood of financial statement fraud. This result strengthened the result of previous studies done by Kirkos, Spathis & Manolopoulos (2007) and Kim (2009). Liquidity had a significance value of 0.000, which was lower than 0.05; thus, liquidity was deemed to have a positive impact on the detection of financial statement fraud. This result supported the results of previous studies by Bachev (2012) and Waleed (2016). The research scheme is shown in Figure 1.

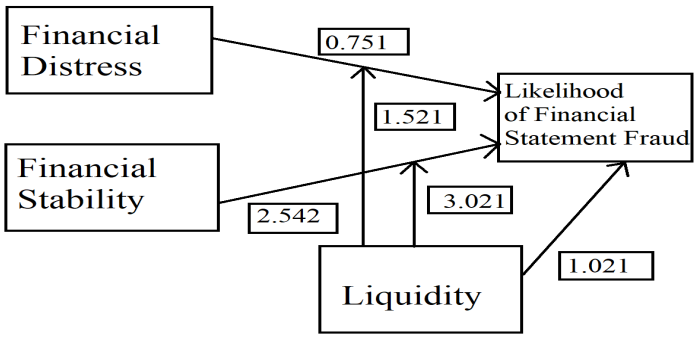

Figure 1. Research Scheme

CONCLUSIONS

This study provided evidence that the investor must be aware to any signals or symptoms regarding financial distress and financial stability problems faced by the corporations. The signals were for example high debt level, continued loss in operation for several periods, and liquidity ratio lower than the standard. A corporate that goes through this situation might be in high pressure to do financial statement fraud to cover their financial difficulties so that investors still see their stocks to be valuable in the capital markets. This research had limitations that it was only conducted in

Indonesian corporations in the banking industry for five consecutive years, between 2012 and 2016. Other studies in the future could extend this study to include firms from other industries for different periods in various countries. Subsequent research could use variations of different variables such as by dividing the liquidity into two types, namely funding and asset-specific, as has been done by Bhanot and Guo (2011) or by considering the unsystematic endogenous risk factor (Kanyugi, 2016) and corporate environment (Hooper and Pornelli, 2010).

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