# Identification of Financial Distress With Company Size As A Moderating Variables in Southeast Asia Property and Real Estate Industry

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#### Abstract.

The objective of this study is to investigate the simultaneous and partial effects between the variables net profit magin, current ratio, and debt to asset ratio to financial distress as moderated by the Firm Size variable in property and real estate companies listed on the Southeast Asia Stock Exchange 2012-2019. Sampling technique used in this study is purposive sampling technique. Sample in this study were 35 companies within 8 years. Therefore, a total of 280 company samples were obtained. technique of analysis used in this study is multiple regression and MRA (Moderated Regression Analysis) using the SPSS 21.0 application. Based on the results of the study, the variable net profit magin, current ratio, and debt to asset ratio affected financial distress by 53.4%, and the remaining 46.6% was influenced by other factors outside the research variables. Partially, the variable net profit margin, current ratio, debt to asset ratio partially has a significant effect on financial distress. Meanwhile, the firm size moderation model does not moderate net profit margin, current ratio, debt to asset ratio to financial distress.

Keywords: NPM, CR, DAR, Financial Distress, Firm Size

# **1. INTRODUCTION**

The spread of the COVID-9 corona virus has paralyzed many sectors and joints of the world's economies, including developing countries in the Southeast Asia region. The property and real estate sub-sector is one of the subsectors that is quite affected by the COVID-19 virus. Property and real estate are businesses engaged in the ownership of assets, both in the form of residential buildings and buildings for commercial purposes. The property and real estate business can provide high and promising profit prospects so that competition between companies both inside and outside the country is very competitive. The property and real estate subsectors have a significant influence in reviving the economy in Southeast Asia, but on the other hand, the value of corporate financial distress in this sub-sector has a fluctuating value due to the ups and downs of the company's financial statement data. Analyzing financial distress and financial reports can be used to assess the performance and soundness of the company, and also to evaluate the effectiveness of policies taken by management.

The following is the value of financial distress in the Property and Real Estate Subsector Companies listed on the Southeast Asian Stock Exchange for the period 2012-2019 which are presented in Figure 1 below:



Pig 1. Financial Distress (Z-core Altman) in property and real estate sub-sector companies in Southeast Asia for the period 2014-2019.

Source: Data is processed from several sources of stock exchanges in Southeast Asia using Microsoft Excel (2016)

Figure 1 shows the results of the analysis of the lowest level of financial risk in Thailand in Southeast Asia, namely 2019, while the highest level of financial risk in Thailand is also in 2015. Based on the Z - Score> 2.99 criteria, namely the level of safe risk and the The level of risk for a vulnerable position is based on the Z-Score 1.81 <Z <2.99 criteria, while the distress risk level is based on the Z-Score <1.81 criteria. The high and low value of the company's financial distress shows the company's financial health and the performance of management policies in managing funds. The small financial distress value of the company, the less likely the company will go bankrupt.

In making decisions to invest, in addition to looking at the level of the company's financial risk, investors also look at the company's financial ratios such as profitability ratios. Profitability ratio analysis is used to measure the company's ability to carry out investment activities, and also to measure the company's success in obtaining acceptable profits. Profitability ratios consist of, NPM (Net Profit Margin), ROI (Return On Investment), ROA (Return On Asset), and ROE (Return On Equity). The profitability ratio used in this study is NPM (Net Profit Margin). NPM (Net Profit Margin) shows the efficiency of management performance in managing the company and also shows the percentage of the company's net profit to net sales which is used by the company to pay company costs and to find out what percentage of profit will be distributed to shareholders.





Source: Data is processed from several sources of stock exchanges in Southeast Asia using Microsoft Excel (2016)

Figure 2 shows the lowest Net Profit Margin (NPM) indicator value in the State of Malaysia in Southeast Asia, namely 2015, while the highest NPM value is Singapore's

country in 2019. The high and low value of the NPM (Net Profit Margin) ratio shows that the company's overall ability to generate net profit and dividend payments to shareholders or profits which will be reinvested into the company.

The liquidity ratio that will be used in this research is CR (Current Ratio). The value of CR (Current Ratio) describes the company's ability to pay short-term debt using current assets.



Fig 3. Current Ratio (CR) in the Poperti and Real Estate sub-sector companies in

Source: Data is processed from several sources of stock exchanges in Southeast Asia using Microsoft Excel (2016)

Figure 3 shows the lowest Current Ratio (CR) indicator value in Malaysia in Southeast Asia, namely in 2015, while the highest Current Ratio (CR) value was in 2016 in Singapore. The high and low value of the current ratio shows the liquidity of the company in its ability to pay its short-term debt obligations. This ratio is used by prospective creditors to determine whether or not to provide short-term loans to companies. In addition to analyzing liquidity ratios, analyzing leverage ratios is also necessary to determine financial difficulties experienced by a company.

Through the leverage ratio, the financing used in carrying out the company's operational activities can be identified, whether from debt or from equity. The leverage ratio used in this study is DAR (Debt to Asset). The value of DAR (Debt to Asset) describes a company's ability to pay its long-term debt.



**Fig 4**. Total Debt Asset Ratio (DAR) in Poperti and Real Estate sub-sector companies in Southeast Asia for the period 2014-2019 (in the currency of each country)

Source: Data is processed from several sources of stock exchanges in Southeast Asia using Microsoft Excel (2016)

Figure 4 shows the lowest Debt Asset Ratio indicator value in Thailand in Southeast Asia, namely in 2017, while the highest DAR value was in 2014 in Thailand as well. The value of the DAR ratio shows how much the company's assets can pay off the company's debt. The higher the DAR value, the higher the company's risk level in paying off its obligations

Total company assets, both current assets and fixed assets, can describe the size of a company. The greater the total assets owned by the company, the easier it will be for management to use the assets in the company, so that the company's value will be better.



**Fig 5.** Firm Size for Poperti and Real Estate sub-sector companies in Southeast Asia for the 2014-2019 period (in the currency of each country)

Source: Data is processed from several sources of stock exchanges in Southeast Asia using Microsoft Excel (2016)

Figure 5 shows the lowest Firm Size Indicator value in the Sinagpura country in Southeast Asia, namely in 2014, while the highest firm size value is in the Philippines in 2019. The high or low firm size value shows the size of the total assets owned by the company.

According to results of previous research Debt to Assets Ratio (DAR) dan Current Ratio (CR) have a significant on financial distress [1]. The current ratio, total debt to total capital asset ratio, and firm size have a significant effect on financial distress [2]. The current ratio and net profit margin have a positive effect on financial distress [3]. The current ratio has a positive effect on financial distress [4]. The debt to total capital asset ratio has a positive effect on financial distress [5]. The total debt to total capital asset ratio has a positive effect on financial distress [6]. The current ratio has a positive effect on financial distress [6]. The current ratio has a positive effect on financial distress [8]. Firm size has no significant effect on financial distress [9].

Based on the description above, researchers are interested in conducting research with the title "The Effect of Net Profit Margin, Current Ratio, and Total Debt To Total Capital Asset Ratio Against Financial Distress with Firm Size as a Moderating Variable (Empirical Study of Property and Real Estate Subsector Companies Listed in Southeast Asia Stock Exchange 2012-2019)".

# Literature Review

# Financial Risk

Risk can be interpreted as a form of uncertainty about a situation that will occur later (future) with decisions taken based on various considerations at this time [10]. To determine the level of financial risk or financial distressed, companies can predict the potential for bankruptcy with the Altman Z-Score method. The Altman Z-score method is an analytical model that functions to predict company bankruptcy with relatively reliable accuracy, so this analysis can be used to regulate the financial risk level of a company. Financial risk analysis is an important tool for obtaining

information relating to financial position with the results that have been achieved through the selection of corporate strategies that will be applied [11].

In assessing the level of financial risk required data and financial statements consisting of income statements and balance sheets. After each data is obtained, then analyzed using the Z-Score method, the company allows to know whether it has a low level of risk, is in a vulnerable position, or has a high level of risk. To be able to analyze the financial risks previously processed data processing by calculating, as for the formula that can be calculated as follows:

## Working Capital to Total Aset

Intended here is an analysis between current assets with current debts (Current Liabilites)

Working Capital to Total Aset = Working Capital/Total Assets

# **Retained Earning to Total Aset**

Retained here is retained earnings, retained earnings to total assets is the company's ability to generate profits in a certain period in terms of the company's ability to earn profits compared to the speed of operating asset turnover as a measure of business efficiency.

Retained Earning to Total Aset = Retained Earning/Total Aset

# Earning Before Interent and Tax (EBIT) to Total Asset.

Is an indicator that can be used in detecting problems with the company's ability.

Earning Before Interent and Tax (EBIT) to Total Asset = Operating Profit/Total Asset Market Value Equity

Is a calculation that measures the company's ability to provide collateral for each debt through its own capital which includes the amount of equity and total debt

Market Value Equity = Total Equity/Amount of Debt

# Sales To Total Liabilities

Is a calculation to measure management's ability to use assets to generate sales.

Sales To Total Liabilities = Sales/Total Asset

After all calculations are obtained then entered into the formula (Hanafi, 2010: 656), namely:

# Z=1.2 (X1)+1.4 (X2)+3.3 (X3)+0.6 (X4)+1.0 (X5)

To find out which company has a high or low risk level can be seen from the Z-Score, if:

- 1. A Z-score of less than or equal to 1.81 means that the company is experiencing financial difficulties and has a high risk.
- 2. Z-Score value between 1.81 to 2.99 means the company is considered to be in the gray area (Gray Area). In this condition, the company is experiencing financial problems that must be dealt with with proper management. If it's too late to handle the company, it can go bankrupt.
- 3. Z-Score value greater than 2.99 means that the company is in good health so it

has a low level of risk.

# Definition of Company Size (Size Firm)

The size of the company can be seen from the total assets owned by the company [12]. The size of the company is the number and type of production capacity and capabilities of the company or the number and type of services that can be provided by the company simultaneously to its customers [12]. Company size can be measured by the formula:

# Net Profit Margin (NPM)

Net Profit Margin or net profit margin is also called the revenue to sales ratio. The method of measuring this ratio is to compare net income after tax with net sales [13]. Here is the NPM formula:

NPM = (Net Profit After Tax) / (Net Sales)

# Current Ratio (CR)

Current ratio is a ratio to measure the company's ability to pay short-term obligations or debts that are due when they are collected as a whole. In other words, how many current assets are available to cover short-term liabilities that are due soon. The current ratio can also be said as a form of measuring the level of safety (margin of safety) of a company. The calculation of the current ratio is done by comparing total current assets with total current debt [14].

Here is the CR formula:

Current Ratio (CR) = Current Asset / Current Liabilities

# Debt to Assets Ratio (DAR)

Debt to Assets Ratio is a comparison between total debt to total assets. Total debt includes short term debt and long term debt. Total assets include current assets plus fixed assets and other assets. Debt to asset ratio shows the amount of debt to total assets at a certain time [15]. Every month or every year the position of this ratio can change for better or for worse.

Here is the Debt to Assets Ratio formula:

Debt to Assets Ratio: Total debt/ Total Assets

# FRAMEWORK



Fig 6. Research Framework

# II. METHODS

This study aims to examine the effect of net profit margin, current ratio, and debt to asset ratio on financial distress in Poperti and Real Estate sub-sector companies in Southeast Asia for the 2014-2019 period. The type of data used in this research is quantitative data and is secondary data, obtained from chemical sector companies listed on the Southeast Asian Stock Exchange (BEI, SGX, HOSE / HSX, and MYX). This research will use quantitative methods. The quantitative method is called the traditional method, because this method has been used for a long time so that it has become a traditional method for research.

# **Population and Sample**

The population used in this study is the financial statements of the Poperti and Real Estate sub-sector companies in Southeast Asia as many as 35 companies. The samples used in this study were 35 companies with complete financial reports from the 2014 - 2019 research year.

 Table 1: List of Property and Real Estate Subsector Companies in Southeast Asia for

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No	Negara	Kode Perusahaan		18		502
140.	Itegala	Koue i ei usanaan		19		AOF
1		APLN		20		B61
2		BAPA		21	Singapura	OU8
3	1	BCIP	1	22		5AE
4		BEST		23		528
5	Trademonia	BIPP	1	24		5DM
6	Indonesia	BKSL	1	25		HOUSE
7		EMDE		26	Filipina	ALI
8		FMII	1	27		CEI
9		GPRA	1	28		MEG
10		GWSA		29		RLC
11		AISB		30		ROCK
12		AMPROP		31		SMPH
13		ASIANPAC		32		ESTAR
14	Malaysia	BCB		33		MK
15		BDB		34	Inailand	PROUD
16		BJASSET		35		TRC
17		CHHB				

the study sample for the period 2014 - 2019

# III. RESULT AND DISCUSSION Descriptive Statistics of Research Variables

# Table 2 Descriptive Statistics of Research Variables

Descriptive Statistics							
	N	Minimum	Maximum	Mean	Std. Deviation		
Net Profit Margin	210	-9,32	34,32	,4188	2,78948		
Current Ratio	210	,11	26,35	3,0180	4,07620		
Debt to Asset Ratio	210	,00	1,21	,4166	,19474		
Financial Distress	210	-38,14	78,18	4,3198	9,93705		
Valid N (listwise)	210						

# Source: Processed Data

Based on the results of statistical analysis, it shows that:

a. During 2014 to 2019 the minimum value of the Net Profit Margin (NPM) variable was -9.32, the maximum Net Profit Margin (NPM) value was 34.32.

The mean Net Profit Margin (NPM) value is 0.4188 and the standard deviation value is 2.78948 with 210 observation data.

- b. During 2014 to 2019 the minimum value of the Current Ratio (CR) variable was 0.11, the maximum Current Ratio (CR) value was 26.35, the mean Current Ratio (CR) value was 3.0180 and the standard deviation value was 4.07620. observation data of 210.
- c. During 2014 to 2019 the minimum value of the Debt to Asset Ratio (DAR) variable was 0.00, the maximum Debt to Asset Ratio (DAR) value was 1.21, the mean Debt to Asset Ratio (DAR) value was 0.4166 and the standard value deviation of 0.19474 with 210 observational data.
- d. During 2014 to 2019 the minimum value of the Financial Distress variable was -38.14, the maximum Financial Distress value was 78.18, the mean Financial Distress value was 4.3198 and the standard deviation value was 9.93705 with 210 observation data.

# Classic Assumption Test Normality Test





Source: Results of data processing for SPPS V21



# Figure 7 Test Histogram (Before Outlier)

Source: Results of data processing for SPPS V21



**Figure 8 P-Plot Normality Test (Before Outlier)** Source: Results of data processing for SPPS V21

From the one sample KS normality test, histogram graph and SPSS P-Plot it can be concluded that the regression model does not meet the normality assumption, it can be seen that the results of one sample Kolgomorov Smirnov statistical test with an asymp sig value. (2-talled) of 0.000, and the normality test with the histogram and P-plot graphs above shows that the normality test is not fulfilled, it can be seen from the graph that does not form a bell and does not follow the diagonal line and then on the P-Plot graph the points appear not follow and move away from the diagonal lines. Because the data is not normally distributed, data outliers or data deletions are carried out, with the initial N totaling 210 to 110 then a second stage normality test is carried out as follows:

Table 4 Normality TestOne Sample Kolgomorov Smirnov (After Outlier)

One-Sample Kolmogorov-Smirnov Test					
		Unstandardiz ed Residual			
N		110			
Normal Parameters <sup>a,b</sup>	Mean	.0000000			
	Std. Deviation	,41976484			
Most Extreme Differences	Absolute	,108			
	Positive	,099			
	Negative	-,108			
Kelmogorov-Smirnov Z		1,136			
Asymp. Sig. (2-tailed)		,151			
a. Test distribution is No	ormal.				

b. Calculated from data.





Figure 9 Test Histogram (After Outlier)

Source: Results of data processing for SPPS V21



**Figure 10 P-Plot Normality Test (After Outlier)** Source: Results of data processing for SPPS V21 **Multicollinearity Test** 

Table 5.	Multicollin	earity Test
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		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model		8	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.962	.092		10.415	.000		
	NPM	039	.093	121	418	.678	.265	3.776
	ROA	013	.204	027	062	.951	.114	8.744
	ROE	001	.040	017	034	.973	.085	11.739

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## Source: Results of data processing for SPPS V21

From the multicollinearity test table, it can be concluded that the results are fulfilled because each variable has a tolerance value greater than 0.10 and a VIF value below <10.

#### **Heteroscedasticity Test**



Source: Results of data processing for SPPS V21

The heteroscedasticity test image shows that the data has spread below and above zero and does not form a pattern.

#### **Autocorrelation Test**

#### **Table 6 Autocorrelation Test**

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson				
1	,740 <sup>a</sup>	,547	,534	,42566	1,942				
a. Pr Cu	a. Predictors: (Constant), Debt to Asset Ratio (X3), Net Profit Margin (X1), Current Ratio (X2)								

b. Dependent Variable: Financial Distress (Y)

# Source: Results of data processing for SPPS V21

The autocorrelation test results show the durbine watson (DW) value of 1.942 which indicates that the DW value is between du (1.7455) to 4-du (2.2545). The DW value is in an area where there is no positive or negative autocorrelation.

# Partial Significance Test (T-test)Table 7. t-test

		0001	nciento					
		Unstandardize	d Coefficients	Standardized Coefficients				
Model		В	Std. Error	Beta	t	Sig.		
1	(Constant)	2,284	,207		11,010	,000		
	Net Profit Margin (X1)	1,032	,305	,222	3,386	,001		
	Current Ratio (X2)	,252	,053	,315	4,748	,000		
	Debt to Asset Ratio (X3)	-2,879	,338	-,564	-8,525	,000		
a. C	a. Dependent Variable: Financial Distress (Y)							

Source: Results of data processing for SPPS V21

The t test results show that the t value is smaller than the t table in hypotheses 1,2 and 3 (3,386 / 4,748 / -8,525 > 1.65882) and the significance value is smaller than 0.05 (0.001 / 0.000 / 0.00 < 0, 05). This means that hypotheses 1,2 and 3 are accepted / supported.

Simultaneous Significance Test (Test F)

#### Table 8. F test

ANOVA <sup>a</sup>									
Mode	ı	Sum of Squares	df	Mean Square	F	Sig.			
1	Regression	23,212	3	7,737	42,703	,000 <sup>b</sup>			
	Residual	19,206	106	,181					
	Total	42,418	109						
a. I	a. Dependent Variable: Financial Distress (Y)								

 B. Predictors: (Constant), Debt to Asset Ratio (X3), Net Profit Margin (X1), Current Ratio (X2)

#### Source: Results of data processing for SPPS V21

Based on table 8, the results of the SPSS version 21 test above the F test results show that the calculated F value is greater than the F table value, namely 42.703 > 2.69, and the significance value is smaller than 0.05 (0.000 <0.05). This means that all NPM, CR and DAR variables simultaneously influence the Financial Distress variable.

# Coefficient of Determination (R<sup>2</sup>)

## **Table 9. Coefficient of Determination**

	Model Summary <sup>D</sup>							
Model	R	R Square	Square	the Estimate				
1	137ª	019	- 048	62560				

#### Source: Results of data processing for SPPS V21

Based on table 9 above, the Financial Distress variable is influenced by all NPM, CR and DAR variables by 53.4%, the remaining 46.6% is influenced by other variables outside of this study.

#### Results of the hypothesis model 1

Hypothesis: Firm Size moderates the impact of Net Profit Margin (NPM) on Financial Distress

# Table 10.Regression Results for Model 1

Coefficients<sup>a</sup>

		Unstandardize	d Coefficients	Standardized Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	-4,655	2,862		-1,626	,105
	Net Profit Margin	,070	,242	,020	,290	,772
	Firm Size	,507	,158	,218	3,213	,002

a. Dependent Variable: Financial Distress

#### Source: Results of data processing for SPPS V21

# Table 11. MRA1 results

Coefficients<sup>a</sup>

		Unstandardize	d Coefficients	Standardized Coefficients		
Model		в	Std. Error	Beta	t	Sig.
1	(Constant)	-4,756	2,888		-1,647	,101
	Net Profit Margin	,776	2,369	,218	,328	,744
	Firm Size	,513	,159	,220	3,219	,001
	X1Z	-,037	,125	-,199	-,300	,765

a. Dependent Variable: Financial Distress

# Source: Results of data processing for SPPS V21

From the two tables in model 1 above, the results of the effect of Firm Size (Z) on financial distress (Y) on the first output (significant) are obtained because of the sig. 0.002 < 0.05 and the interaction effect of Z \* X1 (firm size \* NPM) on the second output is not significant because of the sig. 0.765 > 0.05, it can be stated that in model 1 the Firm Size (Z) is not the Moderator variable.

#### Results of the hypothesis model 2

Hypothesis: Firm Size moderates the effect of Current Ratio (CR) on Financial Distress.

Table 12. Regression Results for Model 2							
Coofficients <sup>a</sup>							

		Unstandardize	d Coefficients	Standardized Coefficients			
Model		В	Std. Error	Beta	t	Sig.	
1	(Constant)	-6,725	2,931		-2,295	,023	
	Current Ratio	,421	,164	,173	2,568	,011	
	Firm Size	,554	,156	,238	3,546	,000	

a. Dependent Variable: Financial Distress

Source: Results of data processing for SPPS V21 Table 13. MRA2 Results

#### Coefficients<sup>a</sup>

		Unstandardized Coefficients		Standardized Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	-4,778	3,577		-1,336	,183
	Current Ratio	-,326	,802	-,134	-,406	,685
	Firm Size	,431	,203	,185	2,126	,035
	X2Z	,048	,051	,311	,950	,343
a Dependent Variable: Financial Distress						

Source: Results of data processing for SPPS V21

From the two tables in model 2 above, the results of the effect of Firm Size (Z) on financial distress (Y) on the first output (significant) are obtained because of the sig. 0.000 < 0.05 and the interaction effect of Z \* X2 (firm size \* CR) on the second output is not significant because of the sig. 0.343 > 0.05, it can be stated that in model 2 the Firm Size (Z) is not the Moderator variable.

# Results of the hypothesis model 3

Hypothesis: Firm Size moderates the impact of Debt to Asset Ratio (DAR) on Financial Distress

Table 14. Results of Regression Model 3

Coefficients<sup>a</sup>

		Unstandardized Coefficients		Standardized Coefficients		
Model		В	Std. Error	Beta	t	Sig.
1	(Constant)	-,348	2,898		-,120	,905
	Debt To Asset Ratio	-14,979	3,348	-,294	-4,474	,000
	Firm Size	,618	,153	,266	4,052	,000
a Danandant\/aviable. Einensial Distance						

a. Dependent Variable: Financial Distress

Source: Results of data processing for SPPS V21

Coefficients								
		Unstandardize	d Coefficients	Standardized Coefficients				
Model		В	Std. Error	Beta	t	Sig.		
1	(Constant)	-11,620	7,198		-1,615	,108		
	Debt To Asset Ratio	11,493	15,840	,225	,726	,469		
	Firm Size	1,261	,405	,542	3,110	,002		
	X3Z	-1,482	,867	-,635	-1,710	,089		
a. Dependent Variable: Financial Distress								

## Table 15. MRA3 Results

# Source: Results of data processing for SPPS V21

From the two tables in model 3 above, the results of the effect of Firm Size (Z) on financial distress (Y) on the first output (significant) are obtained because of the sig. 0.000 < 0.05 and the interaction effect of Z \* X2 (firm size \* DAR) on the second output is not significant because of the sig. 0.089 > 0.05, it can be stated that in model 3 the Firm Size (Z) is not the Moderator variable.

# **IV. CONCLUSION**

Based on the discussion of the research results that have been described, it can be concluded that:

- 1. Partially Net Profit Margin has a significant effect on Financial Distress.
- 2. Current Ratio partially has a significant effect on Financial Distress.
- 3. Partially Debt to Asset Ratio has a significant effect on Financial Distress.
- 4. Net Profit Margin, Current Ratio and Debt to Asset Ratio simultaneously have a significant effect on Financial Distress in the Property and Real Estate Industry in Southeast Asia.
- 5. Firm size does not moderate Net Profit Margin against Financial Distress
- 6. Firm size does not moderate Current Ratio to Financial Distress
- 7. Firm size does not moderate the Debt to Asset Ratio against Financial Distress

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