

# THE IMPACT OF FINANCIAL DISTRESS ON FINANCIAL PERFORMANCE

Special Reference to Listed Non - Banking Financial Institutions in Sri Lanka

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## ABSTRACT

The main objectives of this study is to find out the impact of the financial distress on the financial performance by using 05 years data from the year 2012 to 2016 with the sample of all the 31 listed non-bank financial institutions in Sri Lanka. Therefore, the sample was limited to the 29 of listed nonbanking financial institutions. The current study used two financial performance indicators such as return on asset (ROA), return on equity (ROE) as dependent variables. Whereas, Altman's Z score and Leverage ratio have used as independent variable's indicators. This research is mainly focused on the secondary data and those will be obtaining basically from published annual reports in Colombo Stock exchange. The findings suggest that the financial distressed situation has a significant impact on the financial performance of the listed non-bank financial institutions in Sri Lanka.

**Key Words:** Financial distress, financial performance, Colombo stock exchange, Altman's Z score

## INTRODUCTION

Financial distress is a burning problem to almost all the markets in the world. The term financial distress or failure of companies has accelerated in the world especially in the United States of America from 1930's. But even before, the problem of distress caused some large companies to file for bankruptcy. Financial distress is a situation when a company is unable to meet its financial obligations. It is obvious that detecting of such a situation is very important for long term survival of the firms. Therefore, the financial distress has become a problem to answer because when a company is about to the signaling of financial distress, there is

a problem for the employees of such company as well as for the shareholders, lenders and the other stakeholders. It badly affects the job security of managers and employees and stakeholders' equity position and claims of lenders since their claims are not guaranteed ( Bum, 2007)

As per the IMF, 15 of Sri Lankan finance companies are in a trouble nowadays. In Consequence, it is vital to identify how would be the financial performance of those finance companies. Finally, it may raise a question of how the distressed situation contributes to the firm's financial performance, with regards to the Sri Lankan non-banking financial institutions context. One of the major motivation for this study is related with this matter , and conducting to acquire a proper understanding regarding how would be the effect of financially distressed condition towards the firm's financial performance. Eventually, the findings of this research may proceed to generate some opinion of the causality effect of the distressed condition with the firm's financial performance where it can be used to make precise financial decisions.

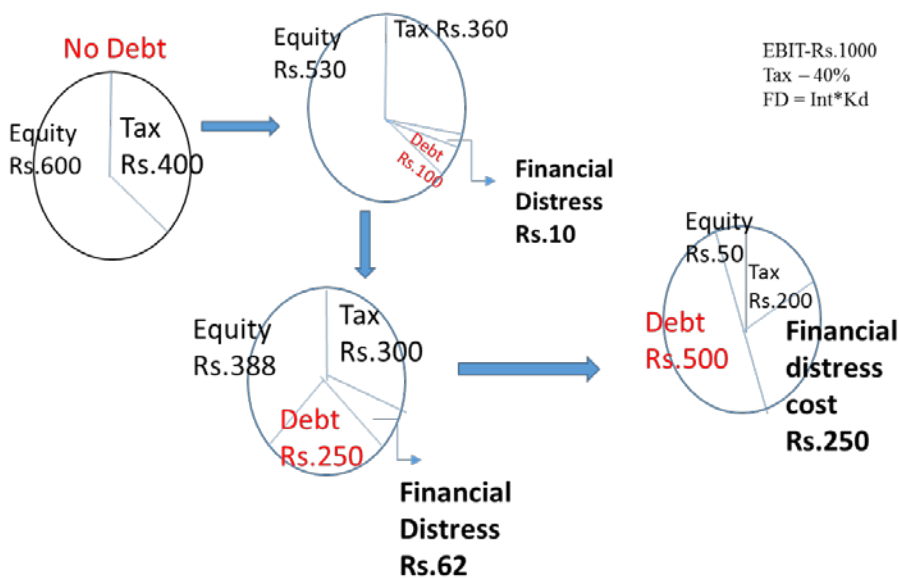


Figure 01

This graph depicts how the financial distress cost is rising whether there is an increment of debts. As shown in the figure, there is a tax benefit due to having more debts. At the same time, it is worth of mentioning here, Shareholders earnings have become lessen due to the financial distress cost and this cost is hidden as everyone expects to reduce tax. Eventually, the company may be distressed since the company has not pay attention towards this concept. Therefore, evaluating the financial distress figures is critical.

In due course, the findings of this research may proceed to generate some opinion of the causality effect of the distressed condition with the firm's financial performance where it can be used to make precise financial decisions. Further this study may be add value to the Sri Lankan context as it shows the effects of financially distressed situation which is not known and not pay much attention even.

As there are 31 listed financial institutions in Sri Lanka, we may consider those 29 companies and thereby, the study is further to be done by categorizing those companies according to the Altman's Z- score criteria. As an example; how many of companies are falling towards the safe area / Grey area / Distressed area as

Altman showed. Then this study is to be further considered that what would be the impact for these categorized companies' financial performance by the distress factor.

Therefore, this study is motivated by the need to understand how financial performance of non-banks financial institutions are affected by financial distress. This will enable the financial institutions to take corrective measures in due time if they find themselves in distress to avoid the shocking results as there a quote called "Prevention is better than cure".

## LITERATURE REVIEW

### Financial Distress

The uncertainty is the most crucial factor that would be a key disruption for everything. Here everything can be subjected to the Corporates. The corporate failure is enormous, especially for the stakeholders of public-held companies. Prior to a corporate failure, the firm's financial status is frequently in distress. This study is basically based on Financial Distress towards the Corporate Failures. Indeed, the concept of Financial Distress has received a significant attention from the global context recently and that has been accelerating as a trend in all over the world.

Since, this study is entirely woven around the concept called "Financial Distress", thereby used to go through the literature as well.as per my knowledge, Financial Distress is a situation where, if any company is unable to pay off its short-term & long-term Liabilities. In a real sense, Company's assets are not plenty of settling their financial obligations. (Baldwin & P .Mason , 1983) Said that ``when a firm's business deteriorates to the point where it cannot meet its financial obligations, the firm is said to have entered the state of financial distress. On the other hand, (Pindado, 2005) (Ward, 1997) concluded that, if the firm is possessing negative cumulative earnings over a few consecutive years, simply noted as cumulative losses and weaken performance, it will subject to a financially distressed situation.

Accordingly, (Opler & Titman, 1994)develops a theory of Corporate Risk Management theory in the presence of dead weight losses caused by financially distress. As per their study, Financially Distressed firm may lose valuable customers, suppliers & key employees. ( Opler & Titman, 1994). It can be cited here a real world incident which was stated in Opler & Titman' study, "There was a drop in sales faced by Apple computers and Chrysler during periods of financial difficulties provide further anecdotal evidence for deadweight losses."

### Financial Performance and Financial Distress

The current study relies on identifying an impact of financial distress on the firm's performance. (Shaukat & Affandi, 2015), conducted a research to investigate the association between financial distress and financial performance. As per the study findings, there is a significant association between finance distress and financial performance. Simply put, upsurge in the Altman's Z score values, which, means lessening the

financial distress and thereby it caused to upsurge in the financial performance. ( Zehri & Mbarek , 2016), compared the relative performance of Islamic and conventional banks, during the last financial crisis in Saudi Arabia. They had used to evaluate the Bank’s performance by categorizing accounting ratios with respect to profitability, risk and efficiency. As risk ratio they have used cash to average total assets that can be used as an independent variable even for the current study.

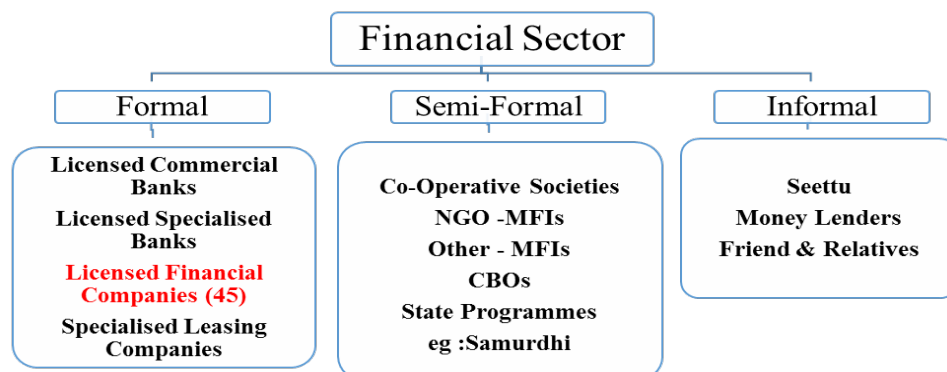
### Financial Performance of Non-Banking Financial Institutions

Financial Institutions are profit organizations and the concept called “Performance” means the economic performance measured by the major financial indicators. Price to earnings ratio, earning per share, Tobin’s-q ratios are indicators for short term and long-term financial performance. For financial Institutions where the majority of investments are publicly traded financial assets, the q ratio measures the market capitalization of a firm’s goodwill. (Harker & Zenios, 2000) With regard to the performance of financial institutions, a review of literature indicates that there is a dearth of literature in relation to NBFIs. According to (Naïmy, 2005) Return on Equity (ROE) also measures profitability from the shareholders point of view and prominence as the accounting measure of overall bank performance. It is defined as net income divided by total equity. Moreover, a study by (Harihar, 1998) throws light on the performance of all NBFCs taken together in terms of cost of debt, operating margin, net profit margin, return on net worth, asset turnover ratio etc.

On the basis of (Kantawala) study, it can be concluded that there exists a significant difference in the profitability ratios, leverage ratios and liquidity ratios of various categories of NBFCs. (Khandoker, Rahman, & Raul, 2013) Examined the determinants of the profitability of firms in the Non-Banking Financial Institution (NBFIs) industry of Bangladesh.

### METHODOLOGY

A population is the entire set of elements from which a sample is drawn. The population included all the forty five of non-banking financial institutions licensed and regulated by the Central Bank of Sri Lanka.



*Figure 02*

The sample is a segment of the population under the study. The target sampling population for the research was all non-bank financial institutions listed on the Colombo Stock Exchange (CSE) as of the time of sampling, while those that were de-listed from the CSE at the time of sampling were excluded. The researcher selected twenty nine financial companies listed at the CSE, summarizes the composition of the final sample. Out of 31 of total listed companies, excluding 02 financial companies which have unable to provide the expected data to conduct the research.

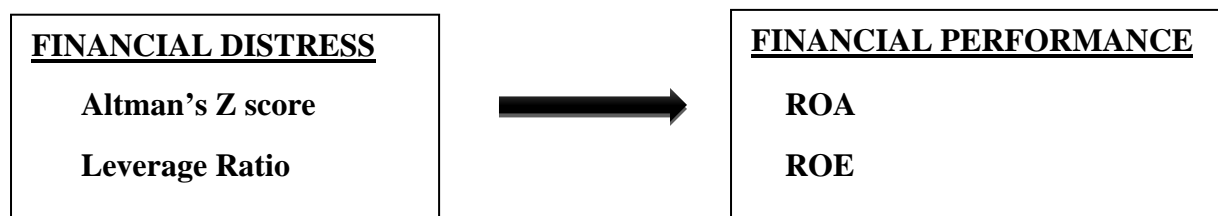
**Operationalization**

<b>Independent Variable</b>	<b>Measurement</b>	<b>Dependent Variables</b>	<b>Measurement</b>
Financial Distress	Altman’s Z score	Financial Performance	ROA
	Leverage Ratio		ROE

*Table 01*

**Conceptual Framework**

This conceptual framework model represents the relationship between financial distress and the Financial Institutions’ Financial performance



*Figure 03*

This research, study the impact of financial distress on financial performance in Sri Lanka, considering the non-bank financial sector. The study focused on secondary data as this is a longitudinal study. The yearly annual reports and the Web sites of the selected firms are the main sources of data. In addition, 02 firms were excluded due to the unavailability of their financial reports, as well as missing values. Accordingly, our final sample consists of 29 non-bank financial institutions. Data is collected for 29 selected sample of non-bank financial institutions over the period of 2012 – 2016.

To examine the impact of financial distress on the financial performance of the Sri Lankan –listed non-banking financial companies. The study was assessed and defined on the basis of the Original Altman Z-score, The Z-scores of the listed non-banking financial companies were obtained through the calculations.

According to the Altman Z-score model, non-banking financial companies are more likely to be classified as “distressed firms” when their Z-scores are less than 1.8 and in between the 1.8 and 3.0 are in “Grey area” which means there is a likelihood of being distressed in near future. Respectively, the companies of which z score is a more than 3.0 are safe according to this classification. As a result, our data set could be split into three categories: distressed, grey, safe firms.

### DATA ANALYSIS AND PRESENTATION

Data analysis is a systematic process which applies statistic techniques to evaluate data through inspecting, transforming and modeling data to draw useful information for decision making. Data was analyzed using multivariate analysis with the aid of Microsoft Excel. All the annual reports which are downloaded from CSE website, are entered in to the spreadsheets and analyzed using STATA to test the validity, reliability, and relationship among the variables. The period of analysis covered five financial years from 2012 to 2016. Financial distress was calculated using Altman Z score model as shown below.

#### Overall Index

$$Z \text{ score (model)} Z = 1.2 X_1 + 1.4 X_2 + 3.3 X_3 + 0.6 X_4 + 1.0 X_5$$

Where,

X1	<b>Liquidity</b>	Working Capital/Total Assets
X2	<b>Profitability</b>	Retained Earnings/Total Assets
X3	<b>Return on Assets</b>	EBIT/Total Assets
X4	<b>Solvency</b>	Market value Of Equity/Total Liabilities
X5	<b>Capital Turnover</b>	Net Sales/Total Assets

Table 02

The results are interpreted and analyzed according to the specific criteria. If the value of

- **Z < 1.80**  
 Bad Indication! The financial institution is most likely to be heading towards bankruptcy problem. Necessary actions are needed to avoid from the worst situation.
- **Z > 1.80 and < 2.99**
- Warning Sign! It is considered as gray area as the financial institution have chances to faces bankruptcy problem
- **Z > 2.99**  
 The financial institution is in good position and safe from financial problem

As mentioned the above, that calculation is for the Independent Variable of the study. There on, the Dependent Variable for the study is Financial Performance where the researcher measure DV from ROA and ROE.

The relationship between financial distress and financial performance was shown using a simple linear regression analysis as shown below.

$$Y = a + bX$$

Where Y will be the dependent variable (Financial performance)

X will be the independent variable (Financial distress)

a= Intercept constant                  b=X coefficient

The researcher has done the Univariate analysis, Test of normality of the data set, bivariate analysis, Multivariate analysis, Panel regression, T test for the analysis purpose.

## DATA ANALYSIS

### Regression analysis

The researcher has constructed the following hypothesis for the current study.

H0 – There is not any impact of the financial distress on the Firm’s financial Performance

H1-There is an impact of the financial distress on the Firm’s financial Performance

Based on the results above, the researcher could report the conclusions of this study as follows:

Interpretation; Results

#### Model 01 - ROA, Z score and Leverage ratio

```
. regress roa zscore leverage,robust
```

```
Linear regression          Number of obs =    145
                           F( 2, 142) =    5.66
                           Prob > F    =  0.0043
                           R-squared    =  0.2293
                           Root MSE  =  .03259
```

roa	Robust					
	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
zscore	.0162968	.0061586	2.65	0.009	.0041223	.0284712
leverage	-.0294669	.0209042	-1.41	0.161	-.0707906	.0118569
_cons	.0194074	.0208978	0.93	0.355	-.0219036	.0607184

A linear regression established that the financial distress has an impact to financial performance of the firm. Since the P-Value of this Model 01 is as 0.0043 (P <0.05).On the other hand, it implies that, the Null hypothesis is rejected while accepting the Alternative hypothesis at the overall model. The regression equation was;

$$\text{Financial Performance} = 0.194074 + 0.0162968 * \text{Z score} + (-0.0294669) * \text{leverage ratio (ROA)}$$

R-Square shows the amount of variance of Financial Performance explained by Altman’s Z score and leverage Ratio. In this Case the model clarifies 22.93 % of the variance in Financial Performance. On the other hand, it says that the Explanatory Power of the model is 22.93 % which is relatively a low value. Therefore to upsurge the relative power of the model has to add IVs to the model.

The Altman’s Z score has a significant impact on ROA since the p> [t] are less than 0.05 and after rousting the leverage ratio become insignificant to the ROA since the p> [t] value is more than 0.05.

The overall model is significant under 95%, 99% confidence level as prob F value is less than 0.05 and 0.01 of significant level.

**Model 02** –ROE, Z score and Leverage ratio

```
. regress roe zscore leverage,robust
```

```
Linear regression                Number of obs =      145
                                F( 2, 142) =      10.96
                                Prob > F      =      0.0000
                                R-squared      =      0.2066
                                Root MSE   =      .03977
```

roe	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
zscore	.0219137	.007026	3.12	0.002	.0080246	.0358028
leverage	.0740919	.0202324	3.66	0.000	.0340964	.1140874
_cons	.0158891	.0199854	0.80	0.428	-.0236182	.0553964

The second DV is ROE and as per the output, the regression formula is,

$$\text{ROE} = 0.0158891 + 0.0219137 * \text{Z score} + 0.0740919 * \text{Leverage Ratio}$$

Same as the ROA there is a significant impact on ROE from the Z score and Leverage ratio since the overall model’s prob > F value is 0 which is less than 0.05 and 0.01 significant levels which implies that under the 95% and 99% of confidence level the overall model is significant.



As mentioned the above, the R –Square is 0.2066 that means the overall model relative power is low and has to add IVs to the model. Since the P>T values are also less than 0.05 and 0.01 for the individual IVs, it can be concluded that there is a significant impact on ROE from the both of IVs.

### Panel Regression Analysis

#### Model 01

```
. xtreg roa zscore leverage, re

Random-effects GLS regression           Number of obs   =       145
Group variable: id                     Number of groups =        29

R-sq:  within = 0.1177                  Obs per group:  min =         5
        between = 0.2813                  avg =         5.0
        overall = 0.1852                  max =         5

Wald chi2(2) =       20.85
corr(u_i, X) = 0 (assumed)              Prob > chi2     =       0.0000
```

roa	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
zscore	.0115396	.0025465	4.53	0.000	.0065485	.0165307
leverage	.0042748	.0131315	0.33	0.745	-.0214624	.030012
_cons	.0001491	.0131301	0.01	0.991	-.0255855	.0258837
sigma_u	.02578649					
sigma_e	.01941684					
rho	.63816761	(fraction of variance due to u_i)				

As there are 29 of group of companies in the sample, the output says that, there is a significant effect of each group to the key findings of the study since the prob > chip value is less than 0.05 of significant level.

Here the regression formula is,

$$ROA = 0.0001491 + 0.0115396 * Z \text{ score} + 0.0042748 * \text{Leverage ratio}$$

Z score has a significant relationship to ROA as individual wise since the P> [Z] value is 0 and that is less than 0.05. In contrast, leverage ratio has a poor relationship to the ROA since its P> [Z] is more than 0.05, (0.745). Although, the overall model is significant since prob > chip value is less than 0.05 of significant level concluding that there is a significant impact from financial distress to financial performance by categorizing the company wise.

#### Model 02

```
. xtreg roe zscore leverage, re
```

```
Random-effects GLS regression           Number of obs   =       145
Group variable: id                     Number of groups =        29

R-sq:  within = 0.2855                 Obs per group:  min =         5
        between = 0.1316                                     avg =        5.0
        overall = 0.1992                                     max =         5

Wald chi2(2) =       49.41
corr(u_i, X) = 0 (assumed)             Prob > chi2     =       0.0000
```

roe	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
zscore	.0209574	.0036226	5.79	0.000	.0138572 .0280577
leverage	.0918414	.0177658	5.17	0.000	.0570209 .1266618
_cons	.0032164	.0175976	0.18	0.855	-.0312741 .037707
sigma_u	.02839328				
sigma_e	.02887852				
rho	.49152803	(fraction of variance due to u_i)			

This table analyze the panel effect for ROE and there are 145 of observations with 29 of number of companies. Here the Prob > chi2 is less than 0.05 and it says that group of the company wise there is a significant effect for the key finding of the research.

$$\text{ROE} = 0.0032164 + 0.209574 * \text{Z score} + 0.0918414 * \text{Leverage}$$

Summary: There is a significant impact to the firm’s financial performance from the financial distress when consider the 29 of group of companies.

Here the Z sore and Leverage ratio has a significant impact to the ROE at the individual level.

### CONCLUSION

This study investigates the impact of financial distress on financial performances with using 29 listed financial institutions with a data set covering 05 years period from 2012-2016. Based on the outcomes of the descriptive statistics, Correlation coefficient analysis, panel data regression analysis and T test were made following conclusions.

The correlation analysis indicates that, financial distress measurement which is Altman Z score has a positive relationship towards the both of ROA and ROE while the leverage has a negative relationship with ROA and has a positive relationship with ROE. Simply put, financial distress (both of Z score and leverage) positively correlates with the financial performance (ROE)

The normal regression results shows that, financial distress has a significant impact to the Firm’s financial performance since the overall significance of the model is there. On the other hand, Panel data regression analysis shows each financial institution has a significant impact of Financial Distress on the financial

performance of the Financial Institutions. The researcher has done the test to identify whether there is any impact from the selected years to the model or not. Thereby, the results shows that, there is not any significant impact for the model when consider the years of data gathered since the  $P > [t]$  values of both of 02 models are more than 0.05.

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