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DETERMINANTS OF PROFITABILITY FOR FINANCIALLY DISTRESS FIRMS IN MALAYSIA

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Abstract: *In this paper, we analyze a panel data of 995 financially distressed firms to determine which firm-specific variable is reliably important in explaining the level of profitability. A better understanding of factors affecting profitability is essential not only for the purpose of enriching empirical studies in this field but also for the purpose of cross-country comparison. The results of the regression also suggest that firm' size, working capital and liquidity have a statistically significant relationship with return on asset. The results also suggest that leverage and growth are insignificant related to the return on asset. Working capital, liquidity and size do not appear to be significantly related to return on asset. In addition to that, return on asset seems to have the greatest influence on the level of determinants of profitability which is explained by the highest t-value of 2.24.*

Key words: *panel data, optimal model*

1. INTRODUCTION

Profitability refers to earnings of companies that are generated from revenues and after deducting all expenses incurred during a given period. Other than that, profitability is usually seen as significant prerequisite for firm survival and longterm achievement; In addition, the variable significantly affects the performance of the other financial goals of the company. Whereas, financial distress represents inadequate liquidity and consequential difficulties of meeting financial obligations promptly. Other than that, financial distress is a long-term process which negatively impacts upon a company's capital structure, investment policies performance and business survival.

A large volume in the literature investigated factors that influence profitability of the firms, Samman [1]. On the other hand, the impact of the size of the firm on profitability. In addition, the influence of working capital management on profitability, among others, the relationship between age of the firm and profitability. Similarly, the impact of using debt on the profitability.

Previous research on determinant of profitability have been done on Insurance industries banking industries. However, few research have been done in Malaysia [2] especially evidence from companies in financial distress. In this paper variables that will be discussed are determinant of profitability of firms in financial distress, the objective to determine the effect of dependent variables and independent variables on profitability of firms in financial distress, also to determine the following objectives,

1. To determine the optimal model
2. To evaluate the effect of the selected predictors on the profitability in financial distress
3. To determine the most significant variable affecting the profitability in financial distress

2. LITERATURE REVIEW

To remain consistent with previous studies, measures pertaining to the dependent variable and the firm profitability were taken from reviewing previous studies.

2.1 Working capital and profitability. (Independent variable)

Working capital management related to all management decisions that will cause the effect towards working capital's efficiency. Net working capital may have positive or negative values. The

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liquidity and profitability of the firms is measure through working capital management that is one of the most important part factors, which also include the decision for the firms itself to measure the amount of current asset and financing the asset. The higher proportion of liquid asset can reduce the cash inflow and out flow. The purpose of controlling working capital is to control the financial of the firms that will balance the profitability of firm and risk of insolvency. Two ways to control the working capital are aggressive working capital management policy and conservative working capital management policy.

2.2 Leverage and profitability. (Independent variable)

Leverage used to assess the extent which the business wan funded by the debt whether or not the firms lending a lot. The reducing of leverage means that the business can generate a lot of profit in the business. The proxy that use in leverage is debt to equity that consist of current asset and current liabilities. The example of currents asset are cash, account receivable, short term investment and inventory. Meanwhile current liabilities includes account payable, bank account overdrafts and customers deposits. Debt to equity is used to assess the long term debt that also the part of the company.

Leverage is one of the factor that having impact on profitability including growth. EPS of the firms is not depend on the capital structure. Thus the profit of the firms can be improved by debt capital structure. The effect of higher long term leverage can cause towards lower industry risk and current asset and also higher investment. The firms that used their own capital will have higher profit since the amount of leverage owned is less. Thus, this can increase the firm performance.

2.3 Liquidity and profitability. (Independent variable)

Liquidity is used to measure the firm's capability to meet its maturing short-term obligation or whether the firm is capable to payback its current liabilities. Liquidity plays an important role in the company in order to measure the successful of the company and also in generate the business well. Thus, liquidity must be manage well by the company to gain an optimal level in the business. Majority of the company expense consist of liquidity. The current asset that include money can be invested and can give income. If the company have shortage of liquidity, the company have to sell some of its liquid assets. The importance of profitability management is it can cause the whole corporate profitability that can generate profit or loss. Liquidity means that for every organization to pay back its current obligation. Thus, liquidity ratio are used for liquidity management in every company to measure the performance of the company. There is a negative relationship between the firm's profitability and the liquidity.

2.4 Firm size and profitability. (Independent variable)

Firm size can be defined as the production of the product or variety of the services and the ability to meet the client requirements. Nowadays, the size of the firm is very important in economies of scale in order to attract all of the investors and clients. Which means that the bigger the firm size has very higher percentage to dominate the market. Total sales and total assets have been used to measure the firm size. Theoretically the firms that have higher profitability can expand their firm size easily through internal financing that can be achieved in a short period of time. Thus, the firms have to take a precaution steps in order to expand the firm size since it may have a higher risks. But, if any of the firms choose debt financing, it may also put the firms on certain risk and might harmful any of the investors in the firm.

2.5 Growth and profitability (Independent variable)

Growth is an investment or project that has the potential to grow significantly, leading to a rofit for he investor. New investments are often presented to potential investors a growth opportunities. They also confirmed that inflation, firm' growth and tangibility with profitability hold the insignificant positive relationship. Moreover, the determinants that could impact the performance of companies that located in China. From the outcome of study, asset structure, companies' size liquidity and growth are significant determinants in impact the profitability. In addition, the profitability of the Portuguese service industry. They get a positive relationship between size, growth and profitability. Moreover, they concluded that higher liquidity will not decrease profitability. On the other hand, lower level of debt and lower level of fixed assets are more profitable for Portuguese service companies. Similar results were obtained. They tested profitability for non-financial firms listed on Athens stock exchange. Their findings disclose that size, sales growth and investment have a positive impact on profitability.

2.5 Return on Asset and profitability. (Dependent variable)

Return on Asset function to measure the ability of a company to generate profit that involving the company's total asset. The higher the ROA of a company will lead to more effective the performance and operation of the company. Thus,

this will give good impact to the investors to invest in a company that will increase stock of the company. Return on Asset can be measured since it include in profitability ratios. This ratio is one of the most crucial ratio since it is able to become an indicator for the company to measure it current performance and help to improve any weaknesses of the company. Assets of the company can be categorized by company properties, capital or foreign capital.

3.0 METHODOLOGY

3.1 Data

The target population for this paper was all firms listed as financially distressed by Bursa Malaysia under the requirement of Practice Notes 4 (PN4), Practice Notes 17 (PN17) and Amended PN17 (APN17) respectively, from 15 February 2001 when PN4 was introduced, until 31 December 2011. The list of all affected issuers was obtained from the Media Releases and Companies Announcement from the Bursa Malaysia website from January 2001 to December 2011. The final sample of firms consists of 995 firms that met the criteria of nonmissing data of financial distress costs and other variables, and, therefore, sufficient firm-year observations over the period of five years before financial distress. The annual reports of the selected firms were obtained from the Annual companies Handbook (various editions) and the DataStream.

3.2 Model and Measurement

The main objective of this paper is to examine the determinants of profitability in financial distress firm. This paper specifies and estimates the following baseline regression model for all firms:

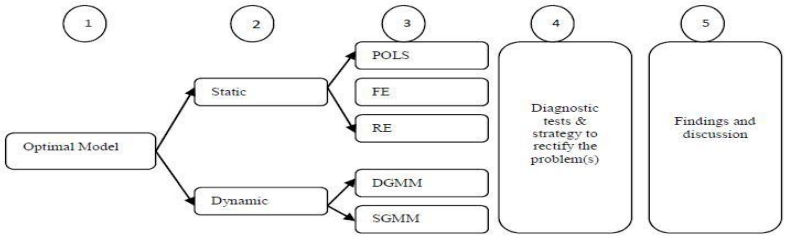
$$ROAit = \beta0 + \beta1WCit + \beta2LEVit + \beta3LIQit + \beta4SIZEit + \beta5GRWit + \varepsilon it \quad (1)$$

ROA is a profitability ratio that measures the net income produced by total assets during a period by comparing net income to the average total assets. Working Capital a financial metric which represents operating liquidity available to a business, organisation or other entity, including governmental entities which is calculated as current assets minus current liabilities. If current assets are less than current liabilities, an entity has a working capital deficiency, also called a working capital deficit. Leverage is a ratio of total debt to total assets, Liquidity is a company's ability to convert its assets to cash in order to pay its liabilities when they are due, size is firm's size, calculated with log of total sales. Growth is annual percentage in sales and the proxy is sales year 2 minus sales year 1 to sales year 1.

3.3 Data Analysis Step

The model of profitability, as presented in equation (1), is estimated by using the panel data analysis steps as illustrated in Figure 1. The first step is to determine the most optimal combination of predictors. In this study, Stata command, *vselect,* is used to determine whether a certain variable should be included in the model. The optimal model defined as the one that optimizes one or more information criteria. Those criteria are Mallow's Cp (C), Adjusted R2 (R2ADJ), Akaike's information criterion (AIC), Akaike's corrected information criterion (AICC), and Bayesian information criterion (BIC). This research uses the definitions of these criteria given. Generally, higher variance explained by the model R2ADJ and lower C, AIC, AICC and BIC values indicate the best fitting model. Similar Stata command, *vselect*, was also used by previous researchers from various fields of studies. The second step is to choose the most appropriate panel data estimator. The two available alternatives for analyzing micro panel data are static and dynamic techniques. The main criterion for choosing between the two alternatives is by looking at the coefficient of the lagged dependent variable. The significance of the lagged dependent variable (p-value < 0.05) would indicate the need to go for dynamic model, as it (dynamic model) is more appropriate and useful when the dependent variable depends on its own past realizations, otherwise static model is to be preferred (p-value > 0.05). The third step
is to choose the most appropriate static or dynamic panel data analysis technique. The choice of the most appropriate static technique depends upon three types of tests as suggested and outlined by Park (2011). The tests are Ftest, Breusch-Pagan Lagrange Multiplier (LM) test, and Hausman test. For dynamic model, System Generalized Method of Moment (SGMM) is preferred against Difference Generalized Method of Moment (DGMM).

This is consistent with the previous literature that SGMM is better and more efficient than DGMM. The fourth and final step is to perform the diagnostic tests (multicollinearity, heteroscedasticity, and serial correlation) and finding the correct strategy to rectify the problem(s) identified (if any). The strategy to rectify the problem(s) will be based on the suggestion.



4.0 FINDINGS AND DISCUSSION

Using the Profit Margin as the proxy for Determinant of Profitability, this section investigates the Determinant of Profitability for all firms classified financially distressed under the requirement of PN4, PN17 and APN17 of Bursa Malaysia. The overall sample consists of 995 observations. The summary statistics of the variables over the sample period is presented in Table 1. The average size of the determinants of profitability for the period of study is -17.19196%, and it ranges from a minimum value of - 362.7459% to a maximum value of 771.4512%.

Table 1: Descriptive Statistics

Variables	N	Mean	SD	Min	Max
ROA	995	-17.19196	73.25753	-362.7459	771.4512
WC	995	-177.4843	732.3896	-71444.22	465.462
LEV	995	88.72801	162.3216	-458.72	980.3
LIQ	995	0.3919571	0.773648	-8.9349	5.7113
SIZE	995	4.310915	1.388415	-3.24	8.76
GRW	995	27.85764	222.4625	-97.0196	2675.408

The next step is to choose the most appropriate panel data estimator. The three available alternatives are pooled ordinary least squares (POLS), fixed effects (FE), and random effects (RE) models. As presented in Table 3, the results of the F-test 0.000, BP-LM test 0.0000 and Hausman test 0.0256 suggest that FE is the most appropriate model estimator.

Table 3: Panel Specification tests

p-values of the tests				
Models	F-test	BP-LM	Hausman	Technique
1	0.0000	0.0000	0.0256	FE

Once the appropriate model was determined which is FE model, various diagnostic tests were then performed to check for the presence of multicollinearity, heteroskedasticity and serial correlation problems. As presented in Table 4, the diagnostic test results indicated the presence of heteroskedasticity 0.0000 and serial correlation 0.0024 problems. To rectify the problems, following the suggestion, remedial procedure has been carried out by using fixed effect (within) regression with cluster option.

Table 4: Diagnostic Tests for Static Models

p-values of the tests				
Models	VIF	H	SC	Strategy
1	1.07	0.0000	0.1687	Fixed-effects (within) regression with robust option

Considering the various diagnostic tests that have been conducted and the remedial procedure undertaken, this paper may say that there is enough evidence to conclude that the examined statistical test satisfies the key assumptions of linear regression. As shown in Table 5, the regression result suggests that the model fits the data well at the 0.05 significance level. The Adjusted R2 of 0.3818 suggests that the five independent variables explain 38% of the variance in the profit margin. The remaining 62% is explained by other variables that were not included in this model. The results of the regression also suggest that firm' size, working capital and liquidity have a statistically significant relationship with return on asset. The results also suggest that leverage and growth are insignificant related to the return on asset. Working capital, liquidity and size do not appear to be significantly related to return on asset. In addition to that, return on asset seems to have the greatest influence on the level of determinants of profitability which is explained by the highest t-value of 2.24.

	Profitability of financial distress
Working Capital	0.0099*
	(1.96)
Leverage	-0.0146
	(-1.09)
Liquidity	14.7343*
	(1.91)
Firm' Size	3.1776**
	(2.24)
Growth	0.0062
	(0.59)
Constant	-33.7950***
	(-4.58)
N	995.0000
r2	0.5081
r2_a	0.3818
F	3.0574
P	0.000

5.0 CONCLUSION

This paper has examined determinants of the profitability for financially distressed firms in Malaysia. Other than that, firm' size seems to have the greatest influence on the level of determinants of profitability which is explained by the highest t-value of 2.24. The results also suggest that one explanatory variables, return on asset are statistically significant. Second, this paper utilizes Stata command *vselect* in determining the most optimal model.

Future researcher might want to use different technique and method of analysis in determining the profitability and types of variables to be included in the model.

6.0 REFERENCES

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