Determination of Financial Distress in Manufacturing Companies on the Indonesia Stock Exchange

Putu Adi Paramartha and Prof. Dr. Ni Luh Putu Wiagustini, SE. M. Si

1 Department Master of Management, Udayana University, Denpasar, Indonesia
2 Professors of ManagementDepartment, Udayana University, Denpasar, Indonesia

Abstract: This study aims to determine the effect of several financial ratios consisting of liquidity ratios, profitability and leverage in predicting financial distress in manufacturing companies on the Indonesia Stock Exchange in 2018. The sampling technique was carried out using purposive sampling with criteria 1 for healthy companies and 0 for companies experiencing financial distress are measured using operating profit before taxes and interest. The results of the research using logistic regression show that financial ratios have an influence on predicting financial distress, shown in the current ratio which has a positive effect on financial distress with a beta value of 0.710, return on assets has a positive effect on financial distress with a beta value of 202.876 and the debt ratio has a positive effect on financial distress. with a beta value of 2.321.

Keywords: Current ratio, Return of assets, Debt ratio, Financial distress.

1. Introduction

The manufacturing industry is the livelihood and future of every country (Ayeni and Badiru; 2020; 25). The manufacturing industry has a big role in encouraging research and development of industrial techniques in addition to generating wealth, along with the help of productivity growth technology in the manufacturing industry which is very important for product growth Gross Domestic Product (Amadu and Samuel, (2020).

Financial distress is the condition of a company before bankruptcy occurs. Bankruptcy is one of the important things to be followed up by every company. In general, there are several things that can cause bankruptcy, ranging from economic factors, finance, disasters, fraud, negligence and others (Brigham and Dave, 2016; 867), of all these factors the dominant thing that determines a company's failure is financial.

Financial factors are the main factor in determining finance due to actions taken by management which result in a series of errors, errors in judgment and interrelated weaknesses (Brigham and Dave, 2016; 866). According to Khaliq et al., (2014) liquidity is one of the financial variables that greatly affects the possibility of financial distress, this research is also supported (Shahwan, 2015; Chiaramonte et al., 2017; Khoja et al., 2019) is getting bigger The liquidity ratio states that the company's financial condition is getting better in creating a mutually beneficial business environment for creditors.

In general, leverage is the use of funds with fixed expenses, it is expected that the use of these funds will increase income. The greater leverage of the company, the greater probability of company failure (Brigham and Dave, 2016; 257). This statement is supported by (Khaliq, et al., 2014; Shahwan, 2015; Carlos, et al., 2015; Baghai, et al., 2016; Lin, 2017; Chen, et al., 2018; Hernandez, et al., 2018; Ayash, et al., 2020). The use of leverage is determined by the management of the company, if leverage is not managed properly with the high leverage the company has, the higher the company's fixed financing will increase the risk of bankruptcy.

Profit or income is one of the measuring tools to show the company's profitability (Choi et al., 2018). Profits indicate an increase in the company's wealth on transactions that occur including main activities and investments. Profitability is also called the net result of policies and decisions implemented by the company (Brigham and Dave, 2016: 259). In general, the higher profitability reduces the possibility of financial distress, this statement is supported by (Geng, et al., 2014; Montserrat, et al., 2016; Baghai, et al., 2016; Nizar, et al., 2016; Constantin, et al., 2016; al., 2016; Dudley, et al., 2018; Choi, et al., 2018; Zhiyong, Li et al., 2020).

Thus, financial distress is very important to measure the financial health of a company, predicting financial distress is the key to the success of consistently growing company value. Information obtained from prediction of financial distress is useful for company management to be able to optimize the use of assets to generate profits and minimize losses when financial distress occurs.

2. Literature Review

2.1 Bankrupcty Theory

In general, bankruptcy is a failure that occurs in a company, whether it is assessed economically or financially by the company.Gitman and Zutter (2012: 738) state that bankruptcy is a business failure that occurs when the value of the company's liabilities exceeds the fair market value of the assets owned by the company.According to Carlos et al., (2015) conducted research on the effect of financial distress on company investment decisions as measured by profitability, leverage and company size.Thus it can be concluded that financial distress is the result of a series of errors, judgmental errors and interrelated weaknesses that can be linked directly and indirectly to management (Brigham and Dave, 2016: 866).

2.2 Financial Statement

The purpose of financial reports is to provide information about the financial position, financial performance and cash flow of an entity that is useful for most users of the report in economic decisions.Financial reports are very important to assess company performance from various aspects that affect firm value (Gitman and Zutter, 2012: 67). Kieso and Weygandt et al., (2018: 28) state that financial reports are the main means by which companies convey their financial information to outside parties.Each financial report has its own function but is related to one another and these four elements are the main key to be reported to shareholders (Gitman and Zutter, 2012: 59).

2.3 Liquidity

Liquidity makes it possible to see in general whether the company is in good health or experiencing financial difficulties judging from the level of liquidity. The greater liquidity the company has, the higher chances of the company creating a mutually beneficial business environment for creditors (Soo et al., 2014). Liquidity analysis emphasizes the ability of management to produce current assets obtained from profits in a certain period as measured by liquidity ratios, according to Brigham and Dave (2016: 251) ratios that can measure company liquidity, namely Current ratio and Quick Ratio Liquidity reflects the ownership of current assets owned by the company (Brigham and Dave, 2016: 1013) and has an influence on financial distress. Liquidity, which is measured using the company's current ratio, is known to have a significant negative effect on the company's financial distress, which means that the higher the current ratio, the less likely it is for financial distress. (Khaliq, et al., 2014; Shahwan, 2015; Chairamonte, et al., 2017; Avino, et al., 2019). Based on this, the research hypothesis is as follows:

H1 : Liquidity has a negative effect on financial distress

2.4 Profitability

Profitability is the company's ability to generate profits and measure the level of operational efficiency in managing its assets. According to Gitman and Zutter, (2012: 79) without any income / profit, companies will find it difficult to get capital from external parties because the level of profitability is one of the main attractions of creditors and investors in seeing company value. According to Brigham and Dave (2016: 292) ratios that can measure profitability are Profit Margin on Sales, Basic Earning Power (BEP), Return on Assets (ROA), Return on Common Equity (ROE). Profitability which is measured using the company's ROA is known to have a significant negative effect on the company's financial distress, which means that the higher the ROA,theless likely it is for financial distress (Geng, et al., 2014; Montserrat, et al., 2014; Nizar, et al., 2016; Constantin A., et al., 2016; Dudley, et al., 2018; Choi, et al., 2018). Based on this, the research hypothesis is as follows:

H2 : Profitability has a negative effect on financial distress

2.5 Leverage

Leverage analysis emphasizes the ability of management to manage debt to generate profits as measured by the leverage ratio.The smaller this ratio the greater creditor's expectations for the company because the greater profit a creditors get.According to Brigham and Dave (2016: 265) the ratios that can measure leverage are Debt ratio, Time Interest Earned, and Earnings Before Interest Tax and Amortization (EBITDA) coverage. Leverage as measured by the company's debt ratio is known to have a significant positive effect on the company's financial distress, which means that the higher the debt ratio the higher possibility of financial distress.(Khaliq, et al., 2014; Shahwan, 2015; Carlos, et al., 2015; Baghai, et al., 2016; Lin, 2017; Chen, et al., 2018; Hernandez, et al., 2018; Ayash, et al., 2020).Based on this, the research hypothesis is as follows:

H3 : Leverage has a positive effect on financial distress.

3. Research Methodology

The population in this study were all manufacturing industries listed on the Indonesia Stock Exchange, as many as 165 companies. The sampling technique used purposive sampling technique. This technique is used to take samples based on the subjective considerations of research tailored to the objectives of the study. The criteria used in selecting the sample are: a) Manufacturing industry that publishes complete financial reports and is available to the public in 2018, and b) Manufacturing industries that are still operating and do not legally declare bankruptcy / bankruptcy in 2018. This study uses non-participant observation data collection methods, namely observation in which the researcher does not participate directly in the activity or process being observed. Non-participant observation is carried out by observing, recording and studying descriptions of financial statement information and annual reports of manufacturing industries listed on the Indonesia Stock Exchange 2018, accessed through www.idx.co.id. The data analysis technique used is descriptive statistics, classical assumption test and logistic regression analysis using SPSS ver. 24.

4. Results and Discussion

4.1 Descriptive Statistics

Descriptive statistics is a method describes the relationship between variables systematically tested by collecting, processing, analyzing and interpreting data in a statistical hypothesis testing.Descriptive statistical analysis is used in this study to provide a description or description of the relationship between research variables, namely liquidity (current ratio), profitability (ROA), leverage (debt ratio) and financial distress (BEP).

4.2 Classic Assumption Test

Classic assumption testing is used to ensure whether the model created is valid or the resulting results are not biased. The classic assumption test in this study includes the normality test, multicollinearity test, heteroscedasticity test and autocorrelation test.

4.3 Logistic Regression Analysis

Table 1 Testing the accuracy of the model (overall model fit test)

This test is carried out by observing the value of -2Log Likelihood Block 0 with the value of -2Log Likelihood Block I in the output of logistic regression testing for this study. These results indicate that the value of -2Log Likelihood Block 0 is greater than the value of -2Log Likelihood Block 1, (150,580> 113,231).So, it is concluded that this research data fulfills the fit model assumptions.

Tabel 5.6 Model Fit Testing Block 0: Beginning Block

Iteration History[a,b,c]		-2 Log likelihood	Coefficients
Iteration			Constant
Step 0	1	150,580	1,252
	2	149,420	1,456
	3	149,416	1,469
	4	149,416	1,469

Block 1 : Method = Enter

Iteration History[a,b,c,d]		-2 Log likelihood	Coefficients			
Iteration			Constant	CR(X1)	ROA(X2)	DEBT RATIO (X3)
Step 1	1	113,231	0,932	0,106	6,049	-0,291
	2	73,557	0,904	,080	19,805	0,013
	3	48,219	1,007	-0,029	40,382	0,221
	4	33,692	1,331	-0,147	67,406	0,197
	5	25,792	2,271	-0,327	101,211	-0,561
	6	22,182	3,306	-0,505	140,288	-1,372
	7	21,020	4,102	-0,633	176,560	-1,939
	8	20,837	4,529	-0,696	197,735	-2,249
	9	20,831	4,624	-0,709	202,668	-2,318
	10	20,831	4,628	-0,710	202,876	-2,321
	11	20,831	4,628	-0,710	202,876	-2,321

Source: Enclosure 3

Table 2 Testing the feasibility of the regression model

Research that uses logistic regression analysis, besides having to fulfill the fit model assumption test, must also fulfill the regression model's feasibility assumption. The significance value of the Hosmer and Lemeshow Chi-Square Test is 1,000.These results indicate that H0 is accepted (cannot be rejected) meaning that this research model is able to predict the value of the observation because it matches the observation data.

Table 5.7 Uji Hosmer dan Lemeshow Test

Step	Chi-square	Df	Sig.
1	0,203	8	1,000

Source: Enclosure 3

Table 3 Test the coefficient of determination (Cox &Snell R square)

The value of Cox & Snell R Square is 0.564 and Nagelkerke R Square is 0.911, which means that the variability of the dependent variable can be explained by the variability of the independent variable, which is 91.1%.

Table 5.8 Coefficient of Determination

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	20,831[a]	0,564	0,911

Source: Enclosure 3

4.4 Hypothesis Test Results

Table 5.9 Hypothesis Test Results

		B	S.E	Wald	Df	Sig	Exp (B)
Step 1[a]	CR(X_1)	0,710	0,466	2,319	1	0,012	12,492
	ROA(X_2)	202,876	65,542	9,581	1	0,002	12,828
	DEBT RATIO (X_3)	2,321	1,913	1,471	1	0,022	37,098
	Constant	4,628	2,132	4,709	1	0,030	102,279

Source: Enclosure 3

a) The constant value is 4.628 which indicates that without the influence of the independent variables, namely the current ratio, return of assets and debt ratio, the probability of financial distress will increase by 4.628.

b) b) The value of the current ratio has a significance of 0.012 which is smaller than the significance level of 0.05 (0.012 <0.05) which states that the current ratio has a significant effect. Judging from the odd ratio value, the current ratio variable has 12.492 times a higher risk of experiencing financial distress.

c) c) The value of return on assets has a significance of 0.022 which is smaller than the significance level of 0.05 (0.022 <0.05) which states that the debt ratio has a significant effect. Judging from the odd ratio value, the return of assets variable has 12,828 times the higher risk of experiencing financial distress.

d) The debt ratio value has a significance of 0.002 which is smaller than the significance level of 0.05 (0.002 <0.05) which states that return of assets has a significant effect. Judging from the odd ratio value, the debt ratio variable has 37.098 times the higher risk of experiencing financial distress.

4.5 Partial Variable Testing (walad test)

Based on Table 5.9, it shows that the Wald test value is 1.491 and a significance level of 0.022 has a smaller significance level than the Wald test (<0.05) which states that all independent variables simultaneously affect financial distress (H0 is rejected and H1 is accepted).

4.6 Research Implication

This research is expected to be able to contribute to the internal parties of the company and potential investors. The main key is to consider management decisions, especially in the financial aspect and can be a reference for information for potential investors in determining which companies to invest in, that the healthier the company's financial condition will be the more feasible for potential investors to invest in the company.

5. Conclusions and Suggestions

Based on the results of the analysis and discussion that has been carried out in this study, it can be concluded that:

5.1 Conclusions

a) Liquidity has a positive effect on financial distress, meaning that if the company's liquidity level increases, it will increase the possibility of financial distress.

b) Profitability has a positive effect on financial distress, meaning that if the level of company profitability increases, it will increase the possibility of financial distress.

c) Leverage has a positive effect on financial distress, meaning that if the company's leverage level increases, it will increase the possibility of financial distress.

5.2 Suggestions

Based on the results and discussion and conclusions, the suggestions that can be given in this research are:

a) For companies with financial distress risk, it is advisable to use financial ratios as a benchmark for financial performance and increase the ability of asset management to minimize corporate risks that occur in the future.

b) Prospective investors who wish to invest in manufacturing companies should first analyze whether the company's financial ratios have a tendency to risk financial distress.

c) For similar research it is recommended to use other independent variables rejecting the determinants of financial distress in companies such as asset management, company size and constitutional ownership.

References

1. Altman, Edward I, 1968. *Financial Ratio Discriminant*, *Analysis and The Prediction of Corporate Bankruptcy, Journal of Finance*. Vol XXIII, No. 4. Page 586-609.
2. Almilia, L. S dan Kristijadi, Emanuel. 2003. Analisis Rasio Keuangan untuk Memprediksi Kondisi *Financial distress* Perusahaan Manufaktur yang Terdaftar di Bursa Efek Jakarta. *Jurnal Akuntansi dan Auditing Indonesia (JAAI)*. Vol. 7 No. 2.
3. Al-Saleh, Mohammad Ahmad & Al-Kandari, Ahmad Mohammad. 2012. *Prediction of Financial distress for Commercial Banks in Kuwait.World Review of Business Research*. Vol. 2. No. 6. Pp. 26 – 45.
4. Amadu, Ismaila and Fambon S. *Power supply and manufacturing growth: Evidence from Cameroon*. *Energy Policy*. 147.111922.
5. Appendini E. 2018. *Financial distress and competitors' investment. Journal of Corporate Finance*. 51,182-209.
6. Asongu, S. A., & Odhiambo, N. M. 2019. "*Foreign direct investment, information technology and economic growth dynamics in Sub-Saharan Africa*". *Telecommunications Policy*, 101838.
7. Avino, Davide *et al.* 2019. *Credit Default Swap as indicator of bank financial distress. Journal of International Money and Finance*. *Volume* 94. *Number* 132-139.
8. Ayash *et al.* 2020. *Leveraged Buyouts and Financial distress. Finance Research Letter*. 101452
9. Baghai, *et al.* 2016. *Talent in Distressed Firms: Investigating the Labor Costs of Financial distress*.pp. 1-62.
10. Baklouti, Nizar *et al.*, 2016. *Corporate Governance and Financial distress of European Commercial Banks. Journal of Business Studies Quarterly*. Vol. 7 No. 3. pp. 75-96.
11. Beaver, W. 1966. "*Financial Ratio as Predictors of Failure*". *Journal of Accounting Research*. Page 71-105.
12. Bersch, *et al.*,2019. *The real effects of bank distress: Evidence from bank bailouts in Germany. Journal of Corporate Finance*. 101521.
13. Betz, *et al.*, (2014). *Predicting distress in European Banks. Journal of Banking & Finance*. 45,225-241.
14. Bhunia, Amalendu and Ruchira Sarkar. 2011. *A Study of Financial Distress Based on MultiDisciminant Analyst*. *Journal of Management Research*, 3(2), pp: 1-11.
15. Brigham, Eugene F. and Daves, Phillip R. 2016. *Intermediate Financial Management*, 12th Edition. USA: Cengage Learning.
16. Brigham, Eugene F. and Houston, Joel F., 2018. *Fundamental of Financial Management*, 8th edition. USA: Cengage Learning.
17. Carlos *et al.*, 2015. *Investment decisions of companies in financial distress. Bussiness Research Quaterly*. 18, 174-187.
18. Caron, J., Fally, T., & Markusen, J. 2020. "*Per capita income and the demand for skills*". *Journal of International Economics*, 123, 103306.
19. Chen, *et al.*, 2018. *Initial compensation contracts for new executives and financial distress risk*: *An empirical investigation of UK firms. Journal of Corporate Finance*. 42, 292-313.
20. Chiaramonte, *et al.*, (2017). *Capital and Liquidity Ratios and Financial distress. Evidence from the European Banking Industry. The British Accounting Review*. 49(2), 138-161.
21. Choi, *et al.*, 2018. *Predicting Financial distress of Contractors in the Construction Industry Using Ensemble Learning. Expert Systems with Applications*. 110, 1-10.
22. Constantin, *et al.*, (2016)., *Network linkages to predict bank distress, Journal of Financial Stability*, 35,226-241.

23. Debbie L. and Richard G., (2020). *An Introduction to Statistical Concepts*. 4th Edition. New York: Taylor & Francis.

24. Dudley, *et al.*, 2018. *Financial distress, refinancing, and debt structure. Journal of Banking and Finance*. 94, 185-207.

25. Dumitrescu, *et al.*, 2019. *Golden Geese or Black Sheep: "Are Stakeholders the Saviors or Saboteurs of Financial distress?". Finance Research Letter*. 101371.

26. Dunne, J. P., & Masiyandima, N. 2017. "*Bilateral FDI from South Africa and Income Convergence* in SADC". *African Development Review*, 29(3), 403–415.

27. Geng, Ruibin, Indranil Boshe and Xi Chen. 2014. P*rediction of Financial distress: An Empirical Study of Listed Chinese Companies Using Data Mining. European Journal of Operational Research,* pp*:* 01-12.

28. Gitman, L.J.; Zutter, C.J. 2012. *Principles of Managerial Finance*. 13e. Boston: Pearson.

29. Ghozali, Iman. 2016. *Aplikasi Analisis Multivariate dengan Program SPSS*.Semarang: Badan Penerbit Universitas Diponegoro.

30. Habib, Ahsan 2013. *Financial distress, Earning management and Market Pricing of Accruals during the Global Financial Crisis*: Managerial Finance. Vol 39 No. 2. 155-179.

31. Hernandez, *et al.*,2018. *Polytomous response financial distress models: The role of accounting, market and macroeconomic* variabel*s. International Review of Financial Analysis*.

32. Home. James C. Van dan John M. Machowiecz. 2009. *Fundamental of Financial Management*. 13th Edition. United Kingdom: *Pearson Education*.

33. Jiming, Li, and Du Weiwei. 2011. *An Empirical Study on the Corporate Financial Distress Prediction Based on Logistic Model: Evidence from China's Manufacturing Industry. International Journal of Digital Content Technology and Its Applications*, 5, pp: 368-379.

34. Jay Heizer, Barry Render, 2005, *Operation Management*. 7th ed, Prentice Hall, New Jersey.

35. Kieso, D. E., Weygandt, J. J., & Warfield, T. D (2011). *Intermediate Accounting* Volume 1 IFRS Edition. United States of America: Wiley.

36. Kusnets, Simon. 1955. "Economic Growth and Income Inequality". *The American Economic Review*. Vol. 45, No. 1. Pp. 1-28.

37. Khoja, L., Chipulu, M., & Jayasekera, R. 2019. "*Analysis of Financial Distress Cross Countries: Using Macroeconomic, Industrial Indicators and Accounting Data*". *International Review of Financial Analysis*, 101379.

38. Lawrence, Judy R. *et al*. 2015. *The Use of Ohlson's O-Score for Bankruptcy Prediction in Thailand*: *The Journal of Applied Bussiness Research*. Vol 31 No.6. 2069-2078.

39. Lee, H., Shin, K., & Lee, J.-D. 2020. "*Demand-side Policy for Emergence and Diffusion of Eco-innovation: The Mediating Role of Production*". *Journal of Cleaner Production*, 120839.

40. Lian, Yili 2017. *Financial distress and customer-supplier relationships. Journal of Corporate Finance*. 43,397-406.

41. Lizal, L. (2002). Determinants of *Financial distress*: *What Drives Bankruptcy in Transaction Economy*? *The Czech Republic Case*. William Davidson Working Paper, (451),1-45.

42. Li, Z., Crook, J., Andreeva, G., & Tang, Y. 2020. "*Predicting The Risk Of Financial distress Using Corporate Governance Measures*". *Pacific-Basin Finance Journal*, 101334.

43. Merwin, C., 1942, F*inancing Small Corporations in Five Manufacturing Industries,* 1926-1936. New York: *National Bureau of Economic Research*.

44. Mokuolu, J. O. 2018. "*Assessment of the Development and Growth of Nigerian Economy as a Function of FDI Flows*". *Journal of Accounting, Business and Finance Research*. Vol. 2, No. 2, pp. 91-97.

45. Montserrat, *et al.*, (2016). *Corporate governance effect on financial distress likelihood: Evidence from Spain*. Revista de Contabilidad, 19(1), 111–121.

46. Olokoyo, F. O. (2013). "*Capital Structure and Corporate Performance of Nigerian Quoted Firms: A Panel Data ApproachI". African Development Review*, 25(3), 358–369.

47. Pindado, julio *et al.*, 2005. *Determinants of financial distress costs. Financial markets and portfolio management*. Volume 19.pp. 43–359.

48. Rahman, Rashidah Abdul and Mazni Yanti Masngut. 2014. *The Use of Camels in Detecting Financial distress of Islamic Banks in Malaysia*: *The Journal of Applied Bussiness Reseach*. Vol 30 No.2. 445-452.

49. Ramser, J. and Foster, L., 1931, "*A Demonstration of Ratio Analysis*", Bulletin No. 40, University of Illinois, Bureau of Business Research, Urbana, Illinois.

50. Platt, H., & Platt, M. B. 2002. Predicting *Financial distress*. Journal of Financial Service Professionals,56: 12-15.

51. Pranowo, K. *et al*. 2010. *Determinant of Corporate Financial distress in an Emerging Market Economy: Empirical Evidence from the Indonesian Stock Exchange* 2004-2008. *International Research Journal of Finance and Economics*. Issue 52. pp. 80-88.

52. Petrović, P., Arsić, M., & Nojković, A. 2020. "*Increasing public investment can be an effective policy in bad times: Evidence from emerging EU economies*". *Economic Modelling.*

53. Scalzer, Rodrigo S. *et al.* 2019. *Financial distress in Electricity Distrbutors from the perspective of Brazillian*: *Energy Policy.*250-259.

54. Shahwan, Tamer Mohamed. 2015. *The effects of corporate governance on financial performance and financial distress: evidence from Egypt.* Journal of Statistics Applications & Probability. VOL. 15 NO. 5, pp. 641-662.

55. Sinaga O., Saudi M.H.M., Roespinoedji D. 2018. "*The Relationship Between Economic Indicators, Gross Domestic Product (Gdp) and Supply Chain Performance*". *Polish Journal of Management Studies.* Vol. 18. No. 1. Pp. 338-352

56. Soo Y, Kim *et al.* 2014. *Predicting Restaurant financial distress using decision tree and adaboosted decision tree models. Economic Modeling.* 355-362.

57. Sugiyono. 2019. *Metode Penelitian Kuantitatif, Kualittatif dan R&D.* Bandung: Alfabeta.

58. Trulyn Aprita Ramadhani, M. Aulia Rachman, Firmansyah, and FX Sugiyanto, 2018, "*The Effect of Investment and Export on Manufacturing Industry in Indonesia" in International Conference on Economics*", *Business and Economic Education* 2018, KnE Social Sciences, pages 1125–1140.

59. Undang- Undang No. 1 Tahun 1967 tentang Penanaman Modal Asing.

60. Winakor, A. and Smith, R., 1935. "*Changes in the Financial Structure of Unsuccessful Industrial Corporations*". Bulletin No. 51, University of Illinois, Bureau of Business Research, Urbana, Illinois.

61. Zaki, Ehab, 2011, *Assessing Probabilities of financial distress of bank in United Arab Emirates. International Journal of Managerial Finance.* Vol 7 No. 3. 304-32.