Sci.Int.(Lahore),28(3),3279-3281, 2016 ISSN 1013-5316;CODEN: SINTE 8

ASSESSING DEFAULT PREDICTION USING LOGISTIC REGRESSION

Suwandi [1], Agha Jahanzeb [2], Saqib Muneer [3*]

[1] Universitas Cenderawasih, Indonesia

[2]Sukkur Institute of Business Administration, Sukkur, Sindh, Pakistan

[3]Government College University Faisalabad, Pakistan

*Corresponding author's email: Saqibmuneer85@gmail.com

ABSTRACT: *A financial forecasting pattern is an approach to aid stockholders to assess the risk in investing in defaulted firms. The extra estimation is nearer to authenticity, the more effective is the assessments based on them. Concerning the effects of monetary suffering on diverse concerned clusters, presenting insolvency calculation arrays are constantly significant. The insolvent group is designated according to being accountable from 2004 to 2013 and non-bankrupt cluster is designated conferring to random sample out of creating businesses accepted in KSE during this research. The results show that the descriptive statistics and correlation matrix are important to show that financial variables are important to check the impact.*

Keywords: Financial Distress, Financial ratios, descriptive statistics

1. INTRODUCTION

Conjecture upcoming procedures can alter past familiarity into forthcoming incidents prediction [1]. Prompt progress of expertise as well as its effects on corporation alongside pronounced ecological variations has specified an ever-increasing rapidity to economic system. This means that the best way a competitive strategy of monetary businesses has inadequate originating assistance and augmented businesses insolvency and monetary hazard option. Forecasting monetary suffering is an approach to profit appropriately by capitalizing chances and to avert worsening foundations. Researchers have considered that "A firm with undesirable status or falling into the category to financial distress is not useful for the stockholder's [2]. It is even not a good signal for the board members to adjudicate on the status of the firms".

To conclude trading or steady development is normal aspects of components and portions of every economical system. The firm's obligatory gust up owing to insolvency is an imperative matter as this incident endures monetary and social costs [3]. In general, any decline in company's value due to company's monetary position exacerbation is reflected as monetary cost [4]. Consequently a lot of arrangements are offered for forecasting organizations' financial suffering and individual insolvency, containing outlines grounded on univariate investigation, multiple discriminant study, logistic regression, probit and recursive apportioning criteria. Alongside noteworthy advancement of different sciences, similar to PC and arithmetic and money related. Scholars have given careful consideration to connected improvements in these sciences in order to outlining more precise examples. The most amazing consequence of this perspective is introducing patters taking into account in neural systems, fluffy rationale and information envelopment software's.

In order to forecast prolific business's monetary suffering, we try to use descriptive statistics which is a measurement of arithmetical assistances and has been used additionally than former assistances in investigation contextual.

2. LITERATURE REVIEW

From the view point of economics and (Weston & Copeland, 1992) study tells that firm's insolvency can be described as its generating loss; so the corporation is in anguish and it hints to insolvency. As a problem, the company's production rate is lesser than asset rate. Insolvency businesses are termed by Newton (1998); [5] [6]as: occupation component that halt their processes owing to obligation or insolvency or discontinuing present actions with loss by creditors.

In Pakistan, insolvency is designated as: "business's insolvency is on the cards if a firm has stopped to pay the liabilities that have to be paid". Conferring to Pakistan, bankrupt firms are unable to pay off its obligation in limited time so total 150 firms are taken in this study in which 50 are bankrupt and 150 are working in stable condition. Seeing this business regulations, the insolvent firm is the one that has accrued insufficiency at least partial of the whale investment.

The procedure or method to calculate firm forthcoming condition is the forecasting of firms previous conditions. Jones Betty and wodlok that has explored insolvency forecasting and it was in 1911. Discriminant technique and monetary ratios was used by Beaver (1966) [7] and he was the first who used to forecast company's insolvency. Edward Altman (1968) [8] also used multiple discriminant analysis. logistic approach was developed by Ohlson in 1981 [9]. Neural network model's was developed by Odom and Sharda (1990)[10]. As they used it for with financial ratios to calculate default prediction. Few researchers have done research in the developing neighboring country about insolvency prediction that are: A study titled Solemani in "to review insolvency forecasting indexes in Iran ecological situation" in 2001[11], a design for estimation insolvency. 15 independent variables were included as some of them were financial ratios and some qualitative variable. Fallahpoor in the year 2003 also done research on financial distress in a study titled "company's monetary forecast" it instigated to forecast prolific business's monetary bankruptcy, and in contrast to it the investigator used the discriminant technique and in the conclusion he used neural network that is evocatively more accurate in forecasting than discriminant technique [12].Hence the hypothesis is that there is an important relation among financial ratios and financial distress.

3. METHODOLOGY

This research methodology is a Census sampling research. The technique used in this study is descriptive statistics and correlation statistics.

Statistical Society and Sample

The sample has been collected from reliable and credible sources of state bank of Pakistan, Federal Bureau of Statistics and Securities Exchange Commission Pakistan (SECP).

Collecting Data

To assemble data, the business's monetary reports obtained in Karachi stock exchange library securities exchange commission Pakistan. Software that was used to calculate and analyze the data is SPSS.

Independent variables in this paper are one of the best operative rations used in insolvency prediction. These variables are:

- Profitability
- Size
- Working Capital
- Growth
- Leverage Ratio

3. RESULTS

In this part first expressive dimension table of the variable (table1) after ignoring the outliers.

Table1- Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
PROF	1510	-.90	2.00	.0883	.13957
SIZE	1520	7.67	20.12	14.7854	2.02349
GROW	1520	-1.00	1.66	.1206	.31697
WC	1503	-1.97	3.00	2.6682	.28118
Leverageratio	1425	.00	.10	.0417	.01907
Valid N (listwise)	1402				

As the descriptive table exhibits that profitability, growth and working capital showing the negative sign and size and leverage ratio shows the positive sign. This means that profitability is negatively related to financial distress.

Table 2- Correlation Matric

		PROF	SIZE	GROW	WC	Leverage ratio
PROF	Pearson Correlation	1	.361**	.125**	.226**	-.293**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	1510	1510	1510	1493	1415
SIZE	Pearson Correlation	.361**	1	.154**	.549**	-.380**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	1510	1520	1520	1503	1425
GROW	Pearson Correlation	.125**	.154**	1	.094**	-.032
	Sig. (2-tailed)	.000	.000		.000	.227
	N	1510	1520	1520	1503	1425
WC	Pearson Correlation	.226**	.549**	.094**	1	-.100**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	1493	1503	1503	1503	1412
Leverage ratio	Pearson Correlation	-.293**	-.380**	-.032	-.100**	1
	Sig. (2-tailed)	.000	.000	.227	.000	
	N	1415	1425	1425	1412	1425

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2 Exhibits the Correlation matrix of all the financial variables that check the impact of the financial variables on financial distress.

3. CONCLUSION

The descriptive table shows that if the variable is negatively associated with financial distress means that if more profitability and size which means that there is less prone to bankruptcy. Which associated to preceding studies attained necessary outcomes.

Correlation table exhibits the association among the variables. Observing on the insolvency by each of the representations is merely expressive about companies forthcoming standing and it is not validating certain insolvency of that firm [13]. This kind of study has two rudimentary limits: 1- it is not conceivable from the industry perspective to choose non-bankruptcy organizations and affected organizations by which their entire possessions are virtually identical to the business. 2- The study variable used in the descriptive statistics is impartial variable and is selected regarding previous research, so the dependent variable is dichotomous.

5. REFERENCES

[1] Armstrong, J. S. *Principles of forecasting (hdbk)*. Kluwer Academic Publisher. (2001).

[2] Ramakrishnan, S, Nabi,. AA, Anuar, M. Impact of sectors on default prediction: theoretical discussion, *Actual problem of economics*. 12, 433-437. (2014).

[3] Ramakrishnan, S. Sanil, H., Kanjanapathy, M. Corporate social responsibility in Malaysian Apparel Manufacturing industry. A study in corporate social responsibility website reporting. *International Review of Management and Marketing*, 6 (4S) 205-208 (2016).

[4] Suresh Ramakrishnan, Sanil S Hishan, Agha Amad Nabi, Zeeshan Arshad, Malini Kanjanapathy, Khalid Zaman, Faisal Khan. An interactive environmental model for economic growth: evidence from a panel of countries. *Environmental Science and Pollution Research*.1-13(2016).

[5] Ramakrishnan, S, Nabi,. AA, Anuar, M.(2016). Default prediction in Pakistan using firm level variables and sector level variable, *International journal of economics and Financial Issues.* 6(S3) 197-202. (2016).

[6] Newton¸G.W. "Bankruptcy Insolvency Accounting Practice and Procedure"1, Wiley, 21-41 (1998).

[7] Beaver, W. H. "Financial ratios as predictors of failure". *Journal of Accounting Research*, 4, Empirical Research in Accounting: Selected Studies, (Supplement), 71-111. (1966).

[8] Altman, E. I. "Financial ratios, discriminant analysis and the Prediction of corporate bankruptcy". *The Journal of Finance*, 23 (4). (1968).

[9] Ohlson, J. "Financial Ratios and the Probabilistic Prediction of Bankruptcy". *Journal of Accounting Research*, No. 18(1): 109-31. (1980).

[10] Odom,M. and Sharda, R. "A neural network model for bankruptcy prediction", *Proceedings of the International Joint Conference on Neural Networks*, II,

PP:63-68. (1990).

[11] Soleimani Amiri GH. "Evaluation of environmental indicators in predicting bankruptcy of Iran". Doctorate degree thesis, Faculty of Management, Tehran University.**(2001).**

[12] Fallah Pour S. "Corporate financial distress prediction model using artificial network". Master's thesis, Faculty of Management, Tehran University. (2003).

[13] Rahnamay rodposhti, f., Alikhani R. and maranjori M. "Application of Altman and Falmr fashion Lhay bankruptcy prediction in listed companies in Tehran Stock Exchange". *Journal of Accounting and Auditing Review* 55 . (2009).